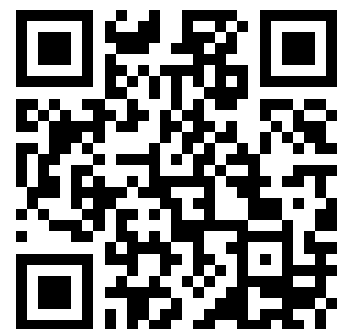
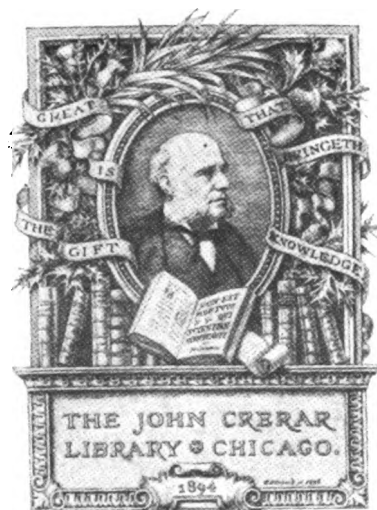

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THE TELEGRAPHER:

PUBLISHED BY THE

National Telegraphic Union.

RETURN TO
WAREHOUSE

VOLUME VI.

FROM

AUGUST 28, 1869, TO AUGUST 27, 1870.

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CONTENTS OF VOLUME VI.

EDITORIALS.

American Fire Alarm Telegraph, The.....	35	Extension P. and A. Lines to New York.....	84	Reprehensible Conduct.....	384
Annual Report of President W. U. Telegraph Co.....	36	Explanatory.....	279	Review of Postal Telegraph Report.....	407
A Small Business.....	60	Financial and Commercial Telegraph, The.....	124	Renew Your Subscriptions.....	416
American Institute Fair.....	60	From the Bed of the Mississippi.....	208	Sixth Volume of THE TELEGRAPHER.....	4
Application for Injunction Dismissed.....	60	Failure of the English Government Telegraph.....	224	Send in Your Lists.....	4
A New Theory of the Aurora Borealis.....	67	Flemming, Potter & Co.....	408	Sad Fate of Charles.....	225
A Telegraphic Artist.....	68	Gone to California—W. Orton.....	52	Signs of Progress.....	335
A New Enterprise.....	75	Gray and Barton.....	150	Satisfactorily Explained.....	360
An Omission Corrected.....	101	Geo. W. Shawk & Co.....	168	Still Another Desertion.....	375
A Proposed Dutch Cable.....	107	Galvanized Telegraph Wires.....	320	Supply and Demand.....	376
Absurd Ignorance.....	116	Government Telegraphs.....	344	That Steel Telegraph Wire.....	4
Another Step in the Right Direction.....	132	Gamewell's Fire Alarm Telegraph.....	352	The Annual Convention.....	4
A Seasonable Present.....	140	Gone.....	408	The National Telegraphic Union.....	12, 44
A Card to the Members of the Telegrapher's League.....	176	Highly Commendable.....	35	The Russian-American Telegraph.....	12
An American Edition of Culley's Work.....	177	How it Works.....	60	The Gold and Stock Telegraph.....	12
American Compound Wire Co.....	184	He Has His Reward.....	216	The Future of the Telegrapher.....	20
A Word for THE TELEGRAPHER.....	200	Honesty the Best Policy.....	296	The W. U. Co. and Government Telegraphs.....	20
A Practical Co-operation Telegraph Line.....	200	Home Again.....	416	The Convention Postponed.....	20
Afraid of the Truth.....	200	Isthmus of Darien Survey.....	175	The New Telegraph Invention—A Call upon Congress.....	20
A Telegraphic Mother.....	208	Information Wanted of N. E. Jacobs.....	312	Telegraph Communication Suspended.....	21
Answer Requested.....	208	Increase of Facilities of the A. & P. Co.....	328	The Construction of Telegraph Lines.....	28
American Compound Wire.....	217	Important to Railroad Managers.....	392	The National Tel. Co.—Attempt to Coerce Subscribers.....	28
Are the Western Union Employees Slaves?.....	232	Justice to a Contemporary.....	35	The Great Gale of Sept. 8th.....	28
Agency of the Brooks Insulator.....	240	Justice to the W. U. Telegraph Co.....	256	The late Josiah B. Thompson.....	29
A Few Suggestions to Telegraph Managers.....	248	Labor Congress and Postal Telegraph, The.....	3	Thomas W. Knox.....	29
A New Labor Organ.....	248	Little's Automatic Telegraph System.....	150	THE TELEGRAPHER.....	44
A Telegraph College Graduate.....	264	Liberality of the Western Union Official Organ.....	248	Too Much Competition.....	52
A Vindictive General Supt.....	264	Let Not Your Angry Passions Rise.....	279	The Insurance Bureau—A Member Deceased.....	60
Address Wanted.....	272	Meeting of the New York District.....	12	Telegraphic Failures.....	68
A Valuable Magnetic Watch Clock.....	287	Modern Practice of the Electric Telegraph.....	44, 116, 192	Telegraph Institutes Again.....	68
A Telegraph Spy System.....	288	More Lies.....	216, 256, 279	Tapping Telegraph Lines.....	68
A Valuable Improvement in the Automatic Telegraph.....	296	Metropolitan Telegraph Co., The.....	52	The Postal Telegraph.....	6
A New Submarine Cable.....	303	Messrs. Orton and Field's Visits to England.....	108	Tapping Telegraph Wires.....	7
Another Telegrapher Turned Editor.....	319	Misrepresentations of the Official Organ.....	132	The Franklin Telegraph Co. in Trouble—A Strike all Along the Line.....	76
A New and Useful Invention.....	320	More Knowledge in High Places.....	216	The Telegrapher's Strike.....	84
A New Feature.....	344	More Light.....	225	The French Cable.....	84
An Agent for THE TELEGRAPHER.....	351	"Mother" Snow's Victims.....	256	The Journal of the Telegraph on Competing Lines.....	92
A New Firm.....	360	Much Needed Reform.....	272	The Western Union Organ and the Strike.....	92
A Valuable Professional Journal.....	376	Newspaper Telegraphic Science.....	375	The Philadelphia Telegraphers and the Strike.....	98
A Little Timely Caution and Advice.....	392	Not Creditable.....	43	The Pacific and Atlantic Telegraph Co.....	92
Accident.....	392	Not the Man.....	124	The Treatment of Telegraphers.....	100
A New Appointment—E. D. L. Sweet.....	392	Notice to Subscribers.....	175	The Atlantic Cables.....	100
Alleged Attempt to Steal News Reports.....	400	Novel Telegraphy—Electrification of an Island.....	184	Tillotson & Co.....	101
An Item About Magnets.....	407	Our Premium Offer.....	328	Telegraphic Competition.....	108
A Journalistic Doxology.....	408	Origin and Progress of the Telegraph System.....	84, 249, 328	The German Connection with the Atlantic Cable.....	108
Automatic Telegraphy.....	408	Our New Premium Offer.....	139	The Rapid Extension of the Telegraph.....	116
Another Volume Completed.....	416	Operators Wanted.....	232	The Telegraphic Out-Throat Game.....	125
A Hint to Napoleon.....	416	Official Statement W. U. Telegraph Co.....	248	Telegraph Wire.....	125
Bradley's Electric Clock.....	108	Obituary—Charles Robinson.....	272	The Telegraphic Fight.....	132
Bishop's Telegraph Cables.....	304	Obituary—P. H. Burns.....	304	To Our Subscribers.....	132
Bradley's Patent Helices.....	408	Packard's Monthly.....	35, 76, 116, 133, 176	The Bishop Gutta Percha Works.....	150
Crowded Out.....	44	Packard's Training School.....	43	The Strike.....	160, 176
Complimentary—H. C. Bradford.....	51	Postponed.....	75	The Telegrapher's Strike.....	168
Correction—Assistant Sup't U. P. R. R. Telegraph.....	51	Presentation to Superintendent E. O. Wait.....	168	Telegrapher's Ball.....	168
C. Westbrook & Co.....	116	Personal.....	184	To Our Correspondents.....	168, 201
Congress—The Telegraph and THE TELEGRAPHER.....	124	Panama and South Pacific Telegraph Co.....	224	The Philadelphia Backsliders.....	168
Christmas and New Year.....	140	Prof. Morse's Report on the Paris Exposition.....	197	The Telegrapher's Ball.....	177
Congratulatory—A. S. Brown.....	159	Packard's College Journal.....	352	The Official Organ and the Strike.....	184
Correction.....	192	Quick Method of Learning the Morse Alphabet.....	297	Telegrapher's Ball, Chicago.....	184
Culley's Handbook of Practical Telegraphy.....	200	Removal Office TELEGRAPHER.....	20	The Postal Telegraph.....	192
Characteristic Shameless Dishonesty.....	232	Returned Home—Gen. W. F. Smith.....	52	The Proscribed Female Operators.....	192
Change of Agents.....	232	Report of Prof. Morse on French Industrial Exhibition.....	116	The Government Telegraph in Great Britain.....	200
Consolidation and Reform of Independent Tel. Lines.....	352	Reduction of Telegraph Rates.....	124	The California Telegraph Strike.....	208
Communication Desired.....	416	Recognition of Merit—J. Y. Case.....	150	The American Compound Wire.....	208
Durant's Nonpareil Relay.....	3	Remember them.....	184	The English Government Telegraph.....	218
Did Not Leave Without Notice.....	75	Return of Gen. Smith.....	184	The Same Just and Liberal Spirit.....	217
Deserved Promotion—A. L'Hommedieu.....	151	Return of President Orton.....	200	The Underground Wire Project Revived.....	224
Don't Forget the Ladies.....	247	Return of Cyrus W. Field.....	217	The Effect of the Cable Consolidation.....	224
Decline of Telegraph Stock.....	266	Rapid Extension of Submarine Telegraphs.....	224	The Brooks Insulator.....	224
Don't Crowd the Ranks.....	264	Removal of Bliss, Tillotson & Co., Chicago.....	280	The Duty of Telegraphic Employes.....	240
Election of Delegates.....	21	Reduction on Wire.....	280	Thanks.....	240
Editorial Absurdities.....	44	Removal of L. G. Tillotson & Co.....	304	The Kansas Situations Filled.....	246
Electrical and Telegraphic Engineering.....	52	Removal of Gray & Barton.....	312	The Benefits of Persecution and Advertising.....	258

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18

CONTENTS.

The New Fire Alarm Telegraph.....	257	The Lesson of the Strike.....	189	From the Monumental City.....	114
The Postal Telegraph Fallacy.....	262	The Printing Telegraph.....	261, 269	Fraternal Interest in THE TELEGRAPH—Caution to Eastern Telegraphers.....	327
The Great Western Telegraph Company.....	263	The New York City Fire Alarm Telegraph.....	277, 285	Further Arguments in favor of the Postal Telegraph.....	406
The West India and Panama Cable.....	264	The Maintenance of the Batteries.....	373	Good News from Pittsburg—Influence of THE TELEGRAPH.....	98
The Right Spirit.....	272			Gamble and Mumford again Shown Up.....	246
Telegraphic Colleges Once More.....	272			Good for Evil—A True Christian.....	318
Testimonial to Prof. Morse.....	279			Happy Funeral—The Olive Branch Accepted.....	350
The Proposed Pacific Submarine Telegraph.....	280			Indignation of Washington Operators.....	26
The New Fire Alarm Telegraph.....	280			Interesting Facts in Supt. Gamble's History.....	262
The Objections to Telegraph Institutes.....	288			Indiscreet Friends—Some Plain Facts.....	286
The Pacific Submarine Telegraph.....	288			Justice to a Franklin Manager.....	106
The Le Clanche Manganese Battery.....	289			Justice.....	130
To the Friends of the Telegraphers' Organ.....	296			Low Salaries and Unfit Accommodations.....	182
The Proposed Submarine Cable to Holland.....	296			Legislative Compliment to a Telegraph Manager.....	247
Telegraphic Education and Proficiency.....	304, 320			Military Telegraph Ciphers.....	74
The Resistance of Relay Magnets.....	312			Monumental City Telegraph Matters.....	152
The Testimonial to Prof. Morse.....	312			Matters in Louisville.....	175
Transfer of the French Cable to the W. U. Co.....	328			Misstatements of the W. U. (California) Officials Shown Up.....	214
The Morse Testimonial.....	335, 360, 376			Morse Testimonial—Dissatisfaction.....	374
The New Telegraph Route to the Pacific.....	335			Mr. Hoover's Defence of Mr. Reid—What is Proposed to be Done.....	383
Telegraphic "Croakers" and Why they Croak.....	336			No War Tax on Telegraph Employees.....	138
Tillotson Gives an Excursion.....	344			Not an Encouraging Prospect.....	247
The Southern and Atlantic Telegraph Company.....	344			Obituary—A Busy Wire—Complimentary.....	50
The Darien Expedition.....	360, 368			Oil Region Telegraph and Telegraphers.....	58
The July Magazines.....	360			Obituary—A. V. Carr.....	130
The Duties of Telegraph Employees.....	368			Oregon Telegraphic Items.....	152
Taken Care of.....	368			Obituary—S. H. Hughes.....	207
The Telegraph in San Salvador, C. A.....	375			" Miss Atherton.....	278
The Postal Telegraph.....	376			Prof. Morse's Report on Paris Exposition.....	74
The Value of Statistics.....	384			Philadelphia Telegraph News.....	98
The War in Europe and the Telegraph.....	384			Planchette's Extra Compensation.....	152
The Fire Alarm Telegraph Completed.....	392			Progress of the Telegraph in South America.....	182
Telegraph Operators Wanted.....	392			Plain Talk by a Disgusted Striker.....	374
The Situation.....	400			Perdu in the Quaker City.....	406
The Guattari Atmospheric Telegraph.....	400			Queries.....	58
The Scientific Journal.....	400			Quaker City News.....	75
The Franklin Telegraph War.....	408			Queer Notions about the Telegraph.....	230
The Electric Telegraph and Railway Review.....	408			Quiet Times in California—Where are the Yontz Monument Funds?.....	318
Unreasonable.....	132			Query.....	319
Unpleasant Reports.....	320			Reply to Several Victims.....	42
Uncertainty of Cable Property.....	328			Rejoicings on the Victory.....	82
Volume Three Wanted.....	51			Reply to Pittsburg Operators.....	82
Valuable Scientific Contributions.....	240			Railroad Telegraphing.....	131
Wanted—Numbers of Round Table.....	75			Railroad Telegraphers Loyal.....	167
Whence is this Thus?.....	124			Reminiscences of the Strike.....	302
Why is it?.....	140			Support THE TELEGRAPH.....	10
Who is Kates?.....	159			Striking Oil.....	50
Washburne and the Postal Telegraph.....	160			Steel Wire and Double Transmitters on the Pacific Coast.....	66
Who Struck First?.....	168			Support THE TELEGRAPH—Its Beneficial Influence.....	106
Wanted—Address of O. O. Hatten.....	208			Spoons by Telegraph.....	114
Wessman, G. C. & Son.....	225			Self-Closing Telegraph Key.....	174
Worthy of Patronage.....	239			Self-Closing Keys.....	191
Where THE TELEGRAPH can be purchased.....	240			Sensible Management of the W. U. Lines South.....	270
Wanted—No. 171 of THE TELEGRAPH.....	264			Salaries Tending Upwards—Telegraphic Personals.....	310
Why we Oppose the Postal Telegraph.....	312			Success of Cooperation on the B. & B. Line.....	326
Wanted—to Complete a Volume.....	351			Sabbath Labor.....	183
Worthy of Patronage.....	352			The Telegraph in Scotland.....	2
Washington, D. C., and the East Indies Telegraphically Connected.....	360			Timely Suggestions to Operators.....	2
				The Salary Question—Increase of Subscriptions to THE TELEGRAPH.....	10
				The Steel Wire Vindicated.....	34
				The Telegraph on the Pacific Coast.....	34
				The Telegraph in Omaha.....	34
				That Obnoxious Order—Information Wanted.....	42
				Telegraph Matters in Baltimore.....	50
				The Object of that Obnoxious Order.....	67
				Telegraph Matters in Baltimore.....	74
				The P. & A. in the Oil Regions.....	82
				Treatment of Pittsburg Operators—A Great Improvement.....	98
				Telegraphers and their Duties to their Employers.....	106
				Telegraph Matters in the Dominion.....	117
				Travelling Experience of a Telegraphic Party.....	114
				The Bible and Shakespeare—Telegraphic Bull.....	114
				Telegraph Matters at the Capitol—Burd under a Table.....	122
				The War Cloud on the Horizon.....	122
				The Telegraphic Contest in the West.....	131
				The Telegraph at the Capitol.....	138
				The New Western Union Office at Boston.....	151
				The Western Union Railroad Telegraph.....	151
				The New Superintendent U. P. R. R. Telegraph.....	151
				The Policy of Telegraph Employees.....	151
				THE TELEGRAPHER appreciated.....	152

ORIGINAL CONTRIBUTIONS.

Army Telegraph Reminiscences, No. II.....	1
" " " No. III.....	33
" " " No. IV.....	97
" " " No. V.....	147
" " " No. VI.....	293
A Carpet Baggist in the Northwest.....	25
A Hand-book of Practical Telegraphy.....	229
Demoll, Charles C.....	89
End of the Franklin Telegraph Strike.....	81
History and Progress of the Electric Telegraph.....	73
In Memoriam—Patrick H. Brophy.....	140
On Some Points in the Construction of Telegraph Wires.....	89
On the Working Capacity of Telegraph Lines.....	357, 365
On Testing for Conductivity and the Location of Faults.....	405
On Supplying a Number of Telegraph Lines from One Battery.....	416
Review of the Report of Prof. Gould on the Transatlantic Longitude.....	325
Review of Report of Select Committee U. S. House Representatives on the Postal Telegraph.....	389, 397, 413
The American Institute Fair.....	49, 65, 73, 82
Thoughts on Telegraphic Communication Thirty-six Years Ago.....	57
The Bishop Gutta Percha Works.....	145
To the Members of the Telegraphers' Protective League.....	181

THE TELEGRAPH.

67	Injury to the Atlantic Cable.....	57
67	India Telegraph, The.....	99
75	Increase of Facilities.....	107
75	Indo-European Telegraph Extension and Connection.....	115
91	International Ocean Telegraph Company.....	123
107	International Telegraph Company.....	139
123	Improvement on the Closed Circuit.....	149
139	Interruption in the Cable Connection Explained.....	199
159	Inability of Government Telegraphy to Do the Business..	239
167	International Telegraph Conference.....	239
175	Improvement in the English Telegraph.....	247
175	Interruption of British Telegraph Lines.....	303
231	Interesting Experiment in Working with Repeaters.....	311
239	Liability of Telegraph Companies.....	107
263	L. S. and M. Railroad Telegraph Line.....	131
278	Legalization of Consolidations of Telegraph Companies..	247
286	Monthly Statement Western Union Tel. Co., July, 1869....	19
327	" " " " " " Aug., ".....	67
334	" " " " " " Sept., ".....	83
351	" " " " " " Oct., ".....	125
392	" " " " " " Nov., ".....	159
399	" " " " " " Dec., ".....	215
414	" " " " " " Jan., 1870.....	248
115	" " " " " " Feb., ".....	279
99	" " " " " " March, ".....	311
175	" " " " " " April, ".....	334
343	" " " " " " May, ".....	383
35	" " " " " " June, ".....	414
61	Mr. Little's Invention.....	21
99	Miss. Valley National Telegraph Company.....	35
131	" " " " " Enjoined.....	51
149	" Division P. and A. Company.....	123
191	More Atlantic Cable.....	199
199	Meeting of Directors W. U. Tel. Co.—Dividend Passed....	327
199	Mid-Channel Telegraph.....	415
215	New Cable, Ireland to America.....	3
223	New Cables Projected.....	11
231	No Telegraphic Concessions in China.....	18
255	New Tariff System W. U. Co.....	35
255	New Arrangement between the Ocean Tel. Companies.....	175
263	No More Monopoly in Cables.....	191
287	National Line Cables.....	263
287	New A. and P. Office in Brooklyn.....	295
327	New Telegraph Company in Iowa.....	351
335	New Lines.....	367
335	New Offices on the Great Western Line.....	375
351	Ocean Telegraphy.....	19
107	Odessa and Constantinople Telegraph.....	107
191	Opposition Telegraph Across the Continent.....	183
215	Opposition to the German American Cable Union.....	215
335	Ocean Cable Consolidation.....	263
359	On the Insulation and Conductivity of Telegraph Lines...	303
3	Opposition Telegraph Lines in Canada.....	331
4	Out of the Depths—A Good Move.....	352
101	Progress of the Atlantic and Pacific Tel. Co.....	35
131	Post-office Telegraphs in Ireland.....	107
191	Pacific Submarine Cable.....	183
199	Panama and South Pacific Telegraph Company.....	197
263	Proposed China Submarine Telegraph.....	197
351	Postal Telegraph and the Press.....	231
351	Protest of Chambers of Commerce against Government	
383	Telegraph Mismanagement in Great Britain.....	239
11	Progress of the National Line.....	255
19	Prostration of Telegraph Lines.....	263
35	Progress of the Great Western Telegraph Co.....	271
	" " West India Telegraph Cable.....	319
51	" " Southern and Atlantic Telegraph Co.....	351
67	" " Laying of the Panama and West India	
107	Cable.....	391, 399
115	Rapid Development of Submarine Telegraphy.....	17
149	Removal Albany Fire Alarm Office.....	51
149	Reduction of Tolls.....	59
263,	Resignation and Appointment Dominion Tel. Co.....	67
375,	Reduction on Cable Messages to Cuba.....	159
	" of Cable Tolls.....	334
231	Relinquishment of Exclusive Telegraph Concession.....	351
263	Repairing of Deep Sea Cables.....	367
295	Scilly Islands Telegraph Cable.....	75
343	Supt. Lehigh Valley Lines Appointed.....	83
131	Suspension of Telegraphing.....	414
139	Telegraph Wires Broken Down by Ice.....	11
27	Telegraph Enterprise.....	19
27	The Telegraphs of Great Britain.....	19
51	Telegraphic Brevities.....	3, 35, 43, 51, 75, 83, 91, 99, 107,
91	115, 139, 149, 159, 167, 175, 183, 199, 215, 231, 255, 295,	
207	311, 343, 351, 375, 384, 414.	

CONTENTS.

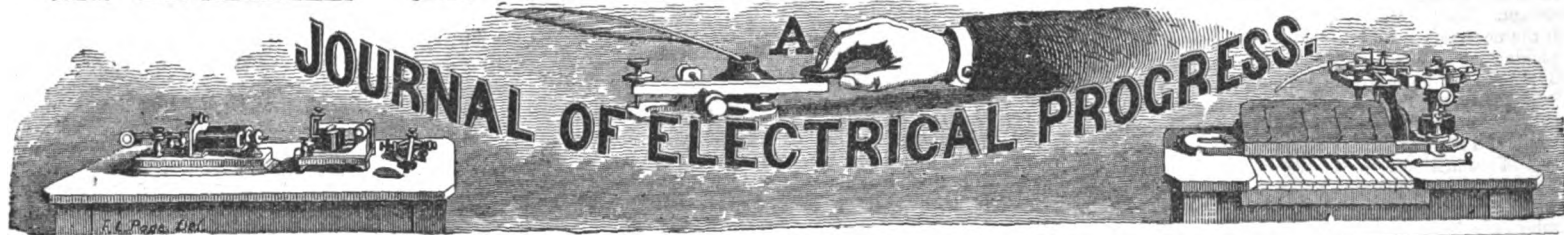
7

Telegraph Wires Prostrated in Europe.....	27	The Telegraph Closely Watched.....	391	English Cable Telegraph Investments.....	197
The French Atlantic Cable.....	27, 113,	Telegraphic Communication with Brazil.....	391	Expensive Correspondence.....	239
The Last Telegraph Consolidation.....	27	The New Cable between England and France.....	391	Electrical Phenomena and Theories.....	317, 333, 341, 349, 357
Telegraph Consolidation—M. V. N. and P. A. Telegraph.....	43	The Siphon Recorder for Submarine Cables.....	387	Electric Batteries.....	327
The Postal Telegraph in California.....	43	Telegraphing on Long Circuits.....	399	Electrical Phenomena in Nature.....	368
Transfer of the Mississippi Valley Lines.....	59	The English Postal Telegraph.....	407, 414	Electro-Magnetic Engines Again.....	369
The Fault in the French Cable.....	59	The Telegraph in Chili.....	415	Extension of Press Facilities.....	400
The Grisselham and Nystad Telegraph Cable.....	67	Telegraphy in South America.....	415	Facetie.....	3
Telegraph Engineer Appointed.....	67	The French Telegraphic System.....	415	First Week of the Telegraph.....	9
The New Belgio-American Cable.....	73, 91	Telegraph Extension in Australia.....	415	Fatal Accident.....	140
The Telegraph in Chili.....	75	The French Military Telegraphs.....	417	Forms for Telegraphic Messages.....	191
The Telegraph in Chili.....	83	Union Pacific Telegraph Line.....	83	From the Darien Expedition.....	255
The Post-office and the Telegraph.....	83	Unsatisfactory Working of the English Postal Telegraph.....	263	Freaks of Lightning with Gas.....	341
The Government Telegraph Schemes.....	91	Western Union Dividend, The.....	115	Government Telegraphs.....	149
The French Government and the Telegraph.....	91	Western Union Telegraph Extension.....	139	Great Eastern at Bombay.....	199
Telegraphic Communication with Australia.....	91	West India Telegraphs.....	167	Government as a Common Carrier.....	205
The Ceylon and Penang Telegraph Cable.....	91			Gamewell's Fire Alarm Telegraph.....	384
The Great Eastern—The Telegraph Cable to India.....	91	MISCELLANEOUS.		Humors of the Telegraph.....	115, 149, 247, 311
The British Post-office and Telegraphs.....	99	An Incident in Laying the French Cable.....	1	Heating Railroad Cars by Electricity.....	245
Telegraphic Connection of London and Australia.....	107	American Association for Advancement of Science.....	3	Information Desired.....	43
The French Cable—General Meeting of the Company.....	113	A Customer.....	18	Information Wanted of Frank Davis.....	67
The Railway Telegraph System.....	113	American Institute Fair.....	19, 49, 65, 73	Information Wanted of J. Martin.....	123
Telegraph from England via India to China.....	123	A Good Layer.....	26	International.....	149
Telegraph from Asiatic Russia to China and Japan.....	123	Auroras and the Sun.....	27	Improved Telegraph Instruments.....	175
The English Telegraphs.....	131	An Amusing Blunder.....	33	Improvements in Telegraph Lines.....	253
Telegraph Excitement in France.....	131	A Telegraph Line Man Killed.....	35	Information Wanted.....	271
The Telegraph in Peru.....	131	Annual Report of W. H. Young, President N. T. U.....	41	Improvements in Electro-Magnets.....	320
Telegraphs to and in the Far East.....	139	A Telegraphic Mania.....	49	Improvement in Smee's Battery.....	333
The Neutrality of Ocean Cables.....	147	A Truly Hibernian Blunder.....	59	Little's Automatic Telegraph Process.....	191
The Transfer of the English Telegraphs.....	149	An English Substitute for Telegraph Extension.....	59	Leclanche's Battery.....	205
The Preservation of Telegraph Posts.....	149	A Character.....	65	Lighting up Beacons and Buoys by Electricity.....	295
The Society of Arts and the Telegraph.....	149	A Telegrapher Wants a Situation.....	67	More Knowledge in High Places.....	45
The French Government and the Atlantic Cable.....	159	Another Bull.....	83	Messages from India to London.....	123
The Telegraph Cable Consolidation.....	167	A Sad Blunder by the Telegraph.....	83	More Work for the Great Eastern.....	247
Telegraphs in Great Britain.....	167, 181	Aluminum for Telegraph Cables.....	90	Martels of Telegraphy.....	247
The Anglo-French Cable.....	183	A Ridiculous Statement.....	107	Magnetic Springs.....	328
The New Washington Line.....	183	An Indignant Editor.....	123	Military Cipher Operators.....	343
The New Fire Alarm Telegraph.....	183	A Bold Step Forward.....	148	New Train Signal.....	99
The Second Persian Gulf Cable.....	183	A General Strike on the Western Union Lines.....	157, 165, 173	New Use for Electricity.....	160
The Telegraph in Salvador.....	183	Aid from the N. T. U.....	159	New Application of Electricity.....	205
Telegraph Extension.....	189	An Operator Killed.....	159	New Telegraph Connection with the Pacific.....	232
The India Cable—Great Eastern.....	191	A Rasally Telegraph Operator.....	167	New Thermo-Electric Pole of Mure and Clamond.....	261
The Telegraph on Isthmus of Panama.....	205	An Elegant Testimonial.....	101	New Use for Electricity.....	237
Telegraphic Troubles in England.....	207	A Serious Accident.....	199	Opposition to Monopoly.....	75
The India Cable.....	207	A Contemptible Trick.....	215	Ocean Telegraph Monopoly.....	175
The Anglo-American Telegraph Company.....	213	A Valuable Lesson.....	223	Ocean Telegraphy.....	237
The French Cable Report.....	215	A Wonderful(?) Electrical Apparatus.....	223	Odd Plans for Car Heating.....	253
The Government Telegraph System in England.....	215	A French Account of the Telegraphers' Strike.....	231	Ocean Cable Profits.....	255
The West India Cable.....	215	An Atlantic Cable to Rhode Island.....	240	Origin of the Report of the Loss of the Dacia.....	351
The English Government Telegraph—Its Incompetency.....	221	Address Wanted—Walter Pierson.....	247	Personals.....	10, 18, 27, 35, 43, 51, 59, 74, 83, 90, 99, 107, 115, 123, 131, 139, 152, 159, 166, 175, 182, 191, 199, 207, 215, 223, 231, 239, 247, 255, 262, 271, 279, 287, 294, 303, 311, 319, 327, 335, 343, 351, 359, 367, 375, 383, 391, 399, 407, 414.
Telegraphic Communication with India.....	223	Another Preposterous Invention.....	253	Practical Annihilation of Time and Space.....	11
Telegraph Extension in Cuba.....	223	A New and Startling Obstacle to Telegraphic Communication.....	269	Presentation to T. M. Bates.....	35
The Atlantic Telegraph Company.....	229	Advantages of a Postal Telegraph.....	270	Proceedings Seventh Annual Convention N. T. U.....	41
The English Telegraphs—More Apologies by the P. M. General.....	231	An Extraordinary Engineering Project on the Ocean.....	309	Patent Office Statistics.....	76
The Atlantic Cable Telegraph.....	239	A Musical Jubilee.....	375	Presentations.....	91
The Proposed Telegraph Congress.....	239	Awkward Result of a Telegraphic Flirtation.....	383	Presentation to J. T. Waugh.....	207
The West India and Panama Telegraph Co.....	263	A Generous Donation.....	415	Petty Jealousies of the Monopoly.....	237
Telegraphic Communication with India.....	271	British Association for Advancement of Science.....	11	Prof. Rood on the Electric Spark.....	295
The Neutrality of Telegraph Cables.....	271	Bradley's Patent Electric Clock.....	105	Prof. Morse Endorses the Pacific Submarine Telegraph.....	309
The New Southern Telegraph Line.....	271	Bolton's Telegraph Code.....	137	Presentation to a Telegrapher.....	311
The Pacific and Atlantic Telegraph Company.....	272	Brooks' Paraffin Insulator.....	819	Prof. Loomis on Mont Blanc.....	312
The Pacific Submarine Telegraph Co.....	279	Bank Alarm Telegraph.....	359	Quick Method of Learning the Morse Alphabet.....	349
Telegraphic Competition to California.....	287	Condensing Magnetism.....	18	Recent British Patents.....	11, 21, 49, 91, 107, 115, 139, 175, 209, 213, 239, 247, 271, 279, 311, 327, 344, 351, 360, 367, 383, 399
The Great Western Telegraph Company.....	287	Cooper Institute Telegraph School.....	83	Recent Scientific Discoveries.....	43
Telegraph Office Burned.....	287	Curious Story of a Thief.....	148	Radiation of Heat from the Moon.....	59
Telegraphic Communication with India.....	295	Comforting.....	159	Removal J. Earl Howard.....	115
The Proposed W. U. Testimonial to Prof. Morse.....	295	Cable Consolidation.....	199	Review of Prof. Morse's Report on French Ind. Exhibition.....	121, 137
The New Telegraph Line to The Pacific.....	297	Couldn't Open the Telegraph Box.....	225	Report on Hubbard's Postal Telegraph Scheme.....	192
The West India and Panama and Cuba Telegraph Co.....	107, 149, 181	Couldn't Play it on Him.....	239	Recent Advances in Electric Science.....	333
		Civilizing Influence of Telegraphy.....	295	Reported Loss of the Steamer Dacia.....	335
		Coöperative Telegraphing.....	311	Superstition in Spain.....	3
		Colors of Gases in Galsaler's Tubes Changed by Magnetism.....	415	spectrum Lines of Aurora.....	59
		Despatch from Bottom Mississippi River.....	199	Sailed for Europe, President Orton.....	123
		Dot Your Eyes—A Good Suggestion.....	360	Sensible and True.....	123
		Duties on Telegraph Wire.....	417	Suicide of a Telegraph Operator—(J. Leet).....	149
		Deaths by Lightning.....	417	Safety of the Great Eastern.....	183
		Electricity is Motion.....	10	Severe on Western Union Officials.....	231
		Electric Lights on the Erie Railway.....	11	Storm and Flood Signals.....	253
		Electricity—Return to the Old Theory.....	17	Speed of Electric Signals.....	295
		Electric Beacons.....	27	Serious Accident to a Telegraph Operator.....	343
		Election in Albany (New York) District N. T. U.....	35	Safety in Mines.....	378
		Enterprise of London Journals.....	49		
		European Mania for Telegraph Cables.....	57		
		Extraordinary Phenomenon.....	57		
		Electric Spiritualism.....	121		
Telegraphic Interruption.....	335				
The New Line to India.....	343				
The Falmouth, Gibraltar and Malta Cable.....	343				
The West India Cables—Arrival of the Dacia.....	351				
The Telegraph in Australasia.....	367				
Telegraphic Statistics.....	381				
The Cable to Jamaica.....	383				
Telegraphic Communication Destroyed.....	383				
The European War and Submarine Telegraphy.....	383				
Telegraphic Correspondence.....	391				

CONTENTS.

Sudden Death of Archie Craig.....	399	Telegraphers' Mutual Ins. Association	123	The First Telegraphic Instrument.....	343
Sad Accident to Wm. Rice.....	399	The Secret of the Aurora Borealis.....	129	The Originator of the Telegraph System.....	366
Slow Telegraphing.....	399	The Wreck of the Bark "Preciosa,".....	129	Telegraph Operator Found Drowned.....	367
Some Transatlantic Bulls.....	405	Telegraphing Extraordinary.....	129	The Telegraph as a Detective.....	383
Singular Electric Phenomena.....	415	Telegraphic Communication with the Planets.....	149	The Telegraphic Instructor.....	400
Telegraph in Verse.....	1	True.....	149	Telegraphic Strategy.....	407
Telegraphing Pulse Beats and Heart Throbs.....	3	The Lightning Manipulators Feasted.....	167	The Franklin Telegraph Company.....	407, 415
Two Hours with the French Cable.....	9	The Hubbard Patent Telegraph Scheme.....	181	Telegraphic Weather Reports.....	415
Telegraph Operator Absconded.....	13	The Little Automatic Telegraph System.....	192	Tillotson's Establishment and the Morse Testimonial.....	415
Timely Precaution.....	27	The Postal Telegraph.....	205	Unfortunate Burglars.....	51
The Eclipse.....	29	The Faraday Memorial.....	215	Very Apropos.....	51
The Great Eastern and the Indian Cable.....	29	The Telegraph Messengers in England.....	221	Vale Spencer.....	59
Telegraphic Wonders.....	33	The American Compound Wire.....	231	Velocity of the Electric Current.....	237, 245
Telegraphic Money Orders.....	59	Telegraph Operator Drowned.....	231	Why Not?.....	21
The Combination Printing Telegraph Instrument.....	65	The Western Union.....	247	Wonders and Blunders of the Telegraph.....	27
Telegraphic News.....	82	The Darien Expedition.....	269	Wanted—Address of Fred. M. Conover.....	83
The Invention of the Electric Telegraph.....	91	The Telegraph and its Modern Applications.....	301	Writes Like a Man.....	107
Tampering with Cambridge, Mass., Fire Alarm.....	123	The Darien Exploring Expedition.....	302	Washburne's Postal Telegraph Bill (Synopsis).....	148
Telegraphic Messages—Responsibility of Telegraph Companies.....	123	Testing the Strength of Electrical Currents.....	341	Wanted—Address S. Peabody.....	166
		The Physiological Effect of the Ruhmkorff Spark.....	341	Western Union Telegraph Co. Again in Trouble.....	183

THE TELEGRAPHER.



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Whole No. 163.

[Written for THE TELEGRAPHER.]

ARMY TELEGRAPH REMINISCENCES.

No. II.

BY AGITATOR.

DURING the early part of the month of November, 1863, Gen. Sherman, then in command of the 15th Army Corps, was making a forced march across the country from Memphis to Chattanooga, Tenn., to support General Rosecrans, who had been partially defeated at Stone River. Upon reaching Elk River the telegraph and cipher operator attached to Gen. Sherman's staff received orders to proceed to Decherd, Tenn., the nearest telegraph office, seventy-five miles distant, send important military despatches to Gen. Grant at Chattanooga, receive replies, and hasten back to meet the corps' advance. One hundred of the 3d regular cavalry were detached as an escort, and on the 3d of November set forth. As this mission was important, no time was lost on the march, although the roads were in a terribly muddy state, and great caution had to be observed against surprise by Confederate Bushwhackers. Fast riding and muddy roads do not add much to the outward appearance of man or beast, and by the time Decherd was reached our staff operator presented about as sorry an appearance as could well be imagined. Let us look at him as he passes the one hotel of the place. To avoid flattery, we will not say that he is good looking. His general appearance indicates familiarity with hardships. A black felt hat, that at one time might have been strictly "regulation," now made its owner appear like a boosier soliciting orders for corn. A brown army shirt, regulation blouse, light blue (under the mud) regulation cavalry pants, and cavalry boots, into which more than half the said pants were now hidden from view; seated on a McClellan saddle, on a 17 hands lank grey war-horse (which war-horse, by the way, was gobbled from an "intelligent contraband"), and you have the picture.

Our friend pulls up in front of the telegraph office about 4 o'clock one very rainy afternoon. Entering, he is greeted with the familiar click. There, in a little 8 by 10 pen, laboriously at work trying to break some obstinate plugs, sits that nervous, mischievous little sprite, Jimmy Lowe. Jimmy is not in the best of humor at this particular time, and dislikes to be interrupted when *in for a fight*.

Thinking he is a student, our friend inquires if the operator is in, accompanying the inquiry by an awkward movement. "Yes, I am the operator. What do you want?"

Now the chance for a good practical joke could not be resisted by our horseman, therefore he quickly decides to have a little fun at Jimmy's expense.

"What sort of a darned clicking thing is that 'ar?" pointing to the register, with its ponderous weight and paper tape.

"That is the telegraph," says Jimmy, "and I am the operator. Do you want to send a message? If not, don't bother me, but go and get some of that mud off from you." Jimmy turns away with a look of disgust, and proceeds to renew his battle over the wire. It will here be proper to state that Jimmy kept a sutler's stand on a small scale in one corner of the office, and, as he afterwards acknowledged, was suspicious that our friend had an eye on a quantity of plug tobacco behind the counter.

After a great many questions relative to the *modus operandi*, all of which worked Jimmy's nerves up to a perceptible tremble, our staff man concluded to bring the matter to a focus.

"See here, stranger, p'rhaps I kin help yer. Just let me in thar, will yer? That tarnel clatter has been agoing on long enough. You won't, eh?" With one stride he

clears the board railing and brings up by Jimmy's side, with open mouth gaping at the instrument.

Jimmy is stormed in his stronghold; he is confounded, don't know what to say, therefore says nothing. He involuntarily drops his hold of the key, and has half a mind to close in with his muddy tormentor, but does not. Mr. Cavalry-man sidles around and gets hold of the key. Jimmy is now nearly frantic; visions of Confederates in disguise flit through his mind, and he looks around for chances of escape. He can read just enough by sound to know that our friend has given a signal for precedence over the wire. He hears him call Chattanooga; he hears Ch. answer. Oh, if he could only get hold of the key now and warn Ch. of danger. He knows our muddy friend is a Confederate operator in disguise, but he is transfixed with wonder. It is now his turn to stare with gaping mouth.

Our friend coolly transmits the despatches, politely calls for pen, ink, and blanks, and receives the long replies without a break, and without using the paper tape. Jimmy cannot make out the purport of what is going on over the wire, and our friend, by hiding the blanks with his hand while receiving, keeps him in the dark. All is soon finished. The despatches are folded, placed in an inner pocket; and with many thanks for the courtesy extended, our friend retires from the office, mounts his stalwart steed, and is soon cantering off to meet his general.

It afterwards came to light that Decherd asked Chattanooga some queer questions over the wire soon after this raid.

[From the Indianapolis Journal.]

Telegraph in Verse.

THE WHOLE ART IN ONE EASY LESSON.

AN officer on duty in this city during the war had occasion to visit the eastern part of the State on public business, and by an accident to the train was detained for six hours at Muncie, during a heavy rain. A young boy, the telegraph operator, was the only occupant of the office, and there was nothing to read but the telegraph manual. To the statement of the boy that it was a good week's work to learn the alphabet, our friend took the book, a pencil and paper, and thus produced the alphabet, repeating it, when completed, before the train was ready to proceed:

THE TELEGRAPHIC ALPHABET IN LIGHTNING VERSE.

DEDICATED TO YOUNG OPERATORS.

Scene—Railroad station, operator's table, Muncie.

Character—Soldier waiting for accommodation train.

Plot—Combination of railroad detentions.

Moral—Learn something wherever you go.

Music—"Au Klinker, Ker-Linker, Ker-Linker, Ker-Link."

PART I.

PROLOGUE.

Begin with the dot, for money doth move
Both pursuer and lover, both hatred and love,
And the glittering peltier, for Christian or Jew,
Makes the mare travel faster, as every one knew.

CANTA, CANTANDUM, CANTATA.

One dot stands for E, for enterprise sure,
And two stands for I, to self ever pure;
Yet divide them a trifle, and lo! you have O,
Or space them a bit, and M is the go.
Three dots stand for S, if all stand together,
But space off the first, and B hastens up.
Make the last stand aloof, and C you shall see;
While four show you H of the loud humming-bee.
Now part the two pairs, Y doth surprise you,
Or space off the first, and A is revealed;
While the fourth being shoved a trifle aside,
It is Z turns up as you eyes open wide.
Five dots stand for P, and winds up the dots;
While klinker, ker-linker, the music still goes,
To while away time and conquer its foes.

PART II.

The lines and the spaces our time now invite,
The first one but dashes, the latter left white;
While the music goes on in measures unnumbered,
'Tis klinker, ker-linker, till the brain is bewildered.

PROCELDUM.

A dot and a dash tell the story for A,
While B is a dash, with three dots at the right,
And D is the same with a single dot less,
And U is a D, only just the reverse.
Three dots and a dash, and V is the letter.
A dot and two dashes wake W up,
While a short dash gives T the short for a traitor,
And the long one makes L, initial of loafer.
A dot and a dash, with a dot close to follow,
Is F, and a letter that is ever in fun;
But a dash and a dot, and the same once repeated,
Is J, for the joke that has had a good run.
Two dashes with dot, will give us our G,
But a dash once withdrawn converts it to N;
While with dash, dot, and dash, the K is exposed,
Being very near the close of the poem proposed.
There remains but our Q—a queen letter it is—
Two dots and a dash, and a dot once again,
With X its reverse, in ecstasy found,
As the train comes along, and for home I am bound.

The French Cable.

AN INCIDENT OF THE VOYAGE—A STORM—THE CABLE BREAKS—IT IS BUOYED AND PICKED UP.

FROM the diary of the correspondent of the London News we quote a part of the account of the parting of the cable on the 1st of July. He says:

"The wind had increased in the night, and now it was blowing a gale, and in order to keep the stern of the ship directly over the line of the cable it was necessary to back her almost at full speed directly against both wind and waves. This, of course, made her kick and heave now and again tremendously, and three or four times she shipped green seas over her stern, fairly drenching those on duty there, and breaking the little gallery around the stern wheel, which certainly is not less than thirty feet above the level of the water. Orders were given to be in readiness to buoy the cable, if necessary; but, as the fault was pronounced to be close at hand, the process of picking up was continued—and most successfully and uninterruptedly continued—till about five knots had come on board, when a heavier sea than usual striking the ship, she gave a kick so sudden and severe that the cable was unable to bear the extra strain thrown upon it, and it parted on board, some two hundred feet beyond the drum. All check being thus suddenly removed from the cable, the drum began to revolve with great rapidity, and the broken end to make frightfully rapid progress toward the stern of the ship, over which it would have disappeared in a very few seconds had not the stout fellows on duty with the stoppers put forth their utmost strength, and so managed to save the French Atlantic Cable literally by a few inches. The buoy was in readiness, and in an incredibly short space of time the buoy-rope was made fast to the end of the cable, and the buoy itself cast adrift. Two other buoys were then let go—one by the Great Eastern and another by the Scanderia—to serve as mark-buoys should any accident befall the buoy which held the end of the cable and grappling become necessary.

"July 2.—By six o'clock this morning the tempest had dwindled to a calm, and all being prepared, a boat was lowered with a few experienced hands in her, who soon managed to attach the chain of the buoy to a stout rope conveyed from the ship. The latter was then cast adrift, and once more the cable, banished for a time, was hanging from the Great Eastern. Picking up then commenced, and by half past seven the end of the cable had come over the stern of the ship, and an hour later the electricians pronounced the fault to be on board. Splicing commenced forthwith, and by half past ten, to the unspeakable delight of every one, we were again paying out and making our way westward. This was the first time in the

history of submarine telegraphy that a cable had been cut, buoyed, and picked up again in such deep water during the process of laying. Although as an engineering feat it is not to be named with the famous grappling of 1866, still as an accomplished fact it is scarcely less important. We have already seen that in calm weather, with the necessary machinery, there was no real difficulty in picking up a cable of 2,500 fathoms, and now Sir Samuel Canning has shown us that, should the weather be unfavorable for immediate recovery, it was comparatively easy, in skilful hands, to buoy the cable in a gale of wind, and then, when the storm abated, to pick up the buoy and resume operations. The fault has been cut out and examined. It differs in no essential matter from the two previously described. Their mode of occurrence puzzles everybody, and although many ingenious theories have been broached none of them will hold water."

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion.

No notice will be taken of anonymous communications.

A Curious Phenomenon.

MEDICINE BOW, W. T., Aug. 15.

TO THE EDITOR OF THE TELEGRAPHER.

Will you please explain the following through the columns of THE TELEGRAPHER?

During a heavy thunder storm last night the line opened. I put on ground wire, but could get no circuit either way. But on testing, by taking hold of ground wire and binding screw of the "cut out," I found a strong current, and could feel my call distinctly. I then "cut out" to examine plug, and, finding it to all appearance "O. K.," replaced it, when my instruments commenced working, and I found "headquarters" calling me. I opened my key to answer, but could not, as the current seemed to leave the wire, and I found things same as at first, viz., apparently open both ways, but in reality closed. On taking out plug and replacing it my instruments commenced working as before. Now, where is the trouble—in cut out, relay or key? I'm sure it was not in the adjustment of the relay, for I tried it in all positions, but could not get a single dot until I did as described above.

NIGHTINGALE.

Can any of our telegraphic friends furnish the desired explanation?—[EDITOR TELEGRAPHER.]

The Telegraph in Scotland.

GLASGOW, SCOTLAND, 10th August.

TO THE EDITOR OF THE TELEGRAPHER.

If any of my brothers of the key wish to ascertain how necessary THE TELEGRAPHER is to their comfort, just let them visit foreign lands (including Jersey). Since my arrival here it has been the only medium whereby I received news from home, and I assure you I look for its arrival very anxiously.

Your new offer of premiums for subscribers is exceedingly liberal, and should certainly have the desired effect of doubling your circulation in a short time.

I have had but little opportunity as yet of seeing much of the British system of telegraphing. A few days ago I had occasion to send a message, and upon mentioning to the operator that I was from America, and in the same business, he kindly invited me inside to see my message despatched. The instrument was of the single needle pattern, and the alphabet the same as the Morse instruments use here; that is, a movement to one side for dashes, to the other for dots. In sending the message the operator stopped at the end of each word and waited until he got an "i" "i" from the receiving operator, showing he had it all right. The whole process was very tedious, and far behind our system. I should say that fifteen words a minute would be about their average speed.

The insulators in use here, so far as I have seen, are of the porcelain kind, and they are rather larger than our glass. The poles are small and low, but well put up, and kept in their place by braces wherever necessary.

At Edinburgh I saw the time-gun at the Castle fired by telegraph from Greenwich at exactly one o'clock each day.

I leave for London and Paris to-day. While in those cities I shall try and see all I can connected with our profession, and will give you an account of it.

The first paper that I saw on my arrival contained an account of the start of the Great Eastern with the French Cable, and now I presume it is in full working order.

LOCAL.

A Pleasant Excursion.

ERIE, PA., August 20th.

TO THE EDITOR OF THE TELEGRAPHER.

ALTHOUGH there is not generally much of interest to communicate from this part of the State, still one incident may be worthy of note:

I allude to a picnic and steamboat excursion on the bay and lake, given yesterday, the 19th instant, by Mr. T. M. Bates, the gentlemanly Train Despatcher and Superintendent of Telegraph of the Erie and Pittsburg R. R., to the operators on his line. They arrived here at 2:30 P. M. and were escorted to the bay where the steamer lay in readiness. After visiting the various points of interest on the bay we quickly arrived at the Crystal Point Pleasure Grounds, where a bountiful lunch was spread beneath the shade of the trees, to which ample justice was done by the merry party. About 6 P. M. we started again on the steamer, and had a beautiful and most enjoyable ride on the bosom of Lake Erie, returning to the dock about 8 P. M. The operators who are employed outside of the city upon the line left for their homes at midnight, highly delighted with their visit to Erie, and more than ever appreciating the kindness of Mr. Bates.

Everything passed off as pleasantly as could be desired, and nothing occurred to mar the pleasure of the trip. There were just twenty telegraphers in the party, and few merrier parties ever left the dock to sail on our beautiful bay.

The whole expense was borne by Mr. Bates himself, and, as far as I know, this is the first time a superintendent of telegraph has ever done anything of the kind. If there have been any others I have yet to learn of it. Mr. B. could not have taken a better way to promote the interests of the company or the employees than to encourage a social and friendly feeling in this way; and it was most highly appreciated and keenly enjoyed by all, and will be an occasion long to be remembered with feelings of pleasure. There is every probability of this not being the last reunion of the kind.

Telegraph matters in general are quiet in this vicinity. Very few changes to note. Should anything transpire of interest to the profession I will try and keep you posted.

A.

Timely Suggestions to Operators.

August 17.

TO THE EDITOR OF THE TELEGRAPHER.

OPERATORS as a class are cultivating their heads and hands to meet the practical needs of every day office life. Some from a love of their work, and ambition to do well what is worth doing at all; others from a dollar and cent point of view, that situations, lucrative and pleasant, may be secured and retained against the more crowded lower ranks of the profession. Whatever the motive, the work of improvement is going on. Operators of comparatively small experience can go to work, locate and remove line and office difficulties that are constantly arising. THE TELEGRAPHER and Mr. Pope's valuable book have had much to do with this by calling our attention to our ignorance and wants.

While we have been cultivating hands and head, how has it been with our hearts? Are not politeness and patience essential requisites of a successful operator? Are we practising these great virtues to the right extent?—are we too rude or too considerate?—or have we luckily adopted a happy medium? How is it regarding patience towards our younger, inexperienced brethren and sisters, who highly appreciate a kindly, encouraging word? We did not, like Topsy, "grow." What we know of operating was acquired by long, diligent hard work, and some of us will always think of those that befriended us in our inexperience with almost reverence. As Mr. Pope did not give us his views upon this subject, may we not have a friendly discussion, obtaining each other's ideas through the columns of THE TELEGRAPHER?

May we not reasonably look for a time when to make our identity known shall insure us welcome as surely as that given to Ministers of the Gospel, Masons, Odd Fellows, Good Templars, &c.?

Another thought occurs here. Why may we not, while on duty, adopt some general material and style of dress, appropriate to sex, that shall be adapted to the season, neat, in good taste and inexpensive?

Our influence extends from the place where our offices are located as far as the circuit upon which we work. Is it for good or evil?

Are we aiming to a high standard, intellectually as well as scientifically?

COMANCHE.

A Telegraphic Alliance.

PHILADELPHIA, Aug. 18th.

TO THE EDITOR OF THE TELEGRAPHER.

WE are glad to record the fact that Dyer is not dead—but only wed-ded. For, on the afternoon of Thursday,

August 12th, Mr. J. W. Dyer, Superintendent of B. & B. Telegraph, Philadelphia, constituted Miss Jennie Paynter assistant superintendent and treasurer of "home company."

The cabalistic signs are that the matrimonial wires will work "relay" well, without crosses or any dire calamities, and now that the loop in the main office is well spliced, that "Brooks" will have to give way to the petticoat insulator.

We earnestly hope that, under the new direction, the young company may, before the close of the year, declare a dividend, and gratify their friends with a new prospectus.

That their joys may be doubled and their sorrows be divided is our sincere wish.

J. T. E.

Another Telegrapher in Luck.

IOWA DIVISION, CHICAGO AND N. W. R. R.

August 12th.

TO THE EDITOR OF THE TELEGRAPHER.

ONE of those unique little episodes, so eventful to the parties directly concerned, occurred August 8th, with great eclat, near the city of Nevada, Iowa, the occasion being the nuptials of one of the worthy brothers of the circuit, Sol. M. Shaffer, Esq., a well known gentleman of scholarly attainments, connected with the telegraphic department, Iowa Division C. and N. W. Railway, at the above named place: the happy and blushing bride being a bonnie lassie of the neighboring vicinity, who, up to the present time, had bloomed, not the prairie rose of fiction, but of Story County, Iowa.

The occasion was one of great enjoyment and gratification to the numerous friends of the bride and bridegroom assembled, and everything was so pleasantly arranged and successfully conducted as to preclude the possibility of dissatisfied criticism. The event will doubtless long be remembered pleasantly by all who were present. The indications were by no means few that the good example set them would soon be followed by others among those who witnessed the pleasing ceremony that joined together, for all time,

"Two souls with but a single thought,
Two hearts that beat as one."

The best wishes and kindest regards of the "Circuit" attend the newly married couple in the coming "test" of their (to them) novel phase of "continuity," existing under such an effective "splicing," which it is to be hoped may long endure, in spite of possible "storms," "crosses" and "contendings."

E.

TO CORRESPONDENTS.

W. C. B.—Drawing received. It is O. K., no doubt, but within the last year several patents of same character have been taken out, not one of which has ever paid patent fees. Would advise you not to invest money on it.

PERSONALS.

Mr. E. B. ELLIOT (whom the newspapers have elevated to the dignity of a Professorship), one of the eminent scientists of the country, was formerly a first class House telegraph operator, and for some time Superintendent of the line of the New York and Boston House Telegraph Company, between Boston and Springfield, Mass.

Col. VAN DUZER, formerly of the U. S. Military Telegraph, and more recently Instructor in Telegraphy and Electric, Signal Corps U. S. Army, has resigned that position, and is looking for more active employment. His address is 514 State street, New Haven, Conn., or care of THE TELEGRAPHER, N. Y.

Mr. GEO. OTIS has returned to his place with the P. & A. Co. at Nashville, after a two months' vacation, spent on Cape Cod, Mass.

Mr. W. CLAY BOWERS is ticket clerk, freight agent and telegraph operator at the Nevada, Iowa, Station of the Chicago and Northwestern Railroad.

Mr. S. M. SHAFFER, the night operator at Nevada Station, has recently married a wife, and is off to Clinton, Iowa, for the honeymoon.

Mr. S. D. ULMER, from Cedar Rapids, temporarily supplies the place of Mr. SHAFFER.

Mr. HARRY S. AUSTIN has taken charge of the Austin, Minn., Station of the Mil. and St. Paul Railway.

Mr. W. T. GOUDIE, formerly operator at White House Station, N. J., office, has retired from telegraphing and gone into the tobacco and sugar business at that place.

A Detroit professor has recently made an analysis of water from a mineral well in Gratiot County, and finds it strongly impregnated with electricity. Interesting facts deducible from the above—electricity is a mineral, and its presence may be discovered by analysis.

(From Packard's Monthly.)

Bring the Nations Nearer.

BY GEORGE W. BUNGAY.

UNDER the ocean waves afar,
Where the beautiful mermaids are (?)
Beyond the light of sun or star,
Or the sound of the cannon's greeting,
The uncoiled Cable lies unseen,
In the deep forests, still and green,
A fiery artery between
Two continents, with lightning beating.

Lodging here on a mountain tall,
Leaving there on an island wall,
Arching above a crystal hall;
Touching the trees as green as laurel,
Sweeping for leagues the ocean bed,
Pulsing softly where sleep the dead—
But they heed not a word that is said
Of the news in their tombs of coral.

Scaring the monsters up to the leas,
Breaking the branches from the trees
Which grow in gardens under the seas;
Breaking down gray-haired oppression,
Reaching afar from sea to sea—
Touching with tidings "you and me,"
Lighting a pathway for the free—
Kindling the torch of true progression.

The Cable brings the good time nigher,
And lifts the plane of culture higher,
And speaks with cloven tongues of fire
The varied speech of many peoples.
Now lightnings flash around the world,
Where hills arise and waves are curled
The flag of stars shall be unfurled,
And wave from roofs and ringing steeples.

Fire comes from the firmament
And flames across a continent,
And lo! the flaming message sent
Solves the hard problem—makes it clearer—
That genius, culture, science, art,
And thinking brains and loyal heart
Can bring the nations, now apart,
In faith, and trust, and honor nearer.

THE TELEGRAPH.

[By Atlantic Cable.]

New Cable.

LONDON, August 25—A new telegraphic cable, on Varley's principle, is projected from Ireland to America.

Electricity and Telegraphy.

WE regret to have to announce that a fault has been discovered in the 1866 Atlantic Cable, the distance being estimated at about 130 miles from the Irish coast. The fault is not of so serious a nature but that communication can be carried on; it has been, however, determined to take steps to immediately repair it. This is the fourth interruption in this cable, which may be looked upon as excessively unfortunate; the 1865 cable, however, is, and always has been, in perfect condition.

The manufacture of the British Indian Submarine Cable, at the Telegraph Construction and Maintenance Company's works at East Greenwich, is making rapid progress, over 500 miles of the deep-sea section between Aden and Bombay being completed. The Great Eastern having arrived at Sheerness from the successful laying of the French Atlantic Cable, will be at once put in order to receive the British Indian Cable, the major portion of which she will carry out in the winter.

The main Black Sea Cable, of about 200 miles in length, has been successfully submerged by Mr. Siemens. The Norwegian Cable from Peterhead to Norway has also just been laid by Mr. Henley. Mr. Henley is now manufacturing at his works a length of cable for the Mediterranean Extension Telegraph Company, to form a duplicate line between Malta and Sicily.—*Mechanics' Magazine*.

The British Government and the Telegraph.

MR. SCUDAMORE, Assistant Secretary at the Post-office, the author of the scheme organized for transferring the management of the telegraphic systems from private companies to the Government, has recently addressed a letter to the Secretary of the Sheffield Chamber of Commerce, in answer to an application made by that body that a uniform rate of sixpence should be charged for all telegrams of a certain length sent from one part to another of the United Kingdom. Mr. Scudamore's reply is conveyed in the following words:

I am directed to acquaint you that the Marquis of Hartington is not insensible to the advantages derivable from a uniform sixpence rate for telegrams throughout the United Kingdom, and that the subject will receive due consideration when the proper time arrives. At the same time I am to explain that it is considered that at all events at the outset, and until the transmitting capacity of the wires of the proposed system of Post-office telegraphy shall have been tested, and the training of the reorganized staff be perfected by experience, it would be inexpedient for the department to bring upon the telegraphs the enormous increase of business which it is tolerably certain would follow the introduction of a lower rate than one shilling.

It is understood that the new cable which it is intended to lay from the Orkneys through the Faroe Islands to Quebec, as well as the Pentland Frith line, will pass into the hands of the Government on their completion.

TELEGRAPHIC BREVITIES.

IN Brussels boxes have been put up in various parts of the city for the reception of telegraphic letters, which are duly stamped and collected at frequent intervals, taken to the office and telegraphed off.

Danbury and Norwalk, Conn., have been connected directly by telegraph.

A new telegraph line will soon be put up by the Western Union Company between Portland and Calais, Maine, by way of Lewiston.

Haverhill, Mass., is to have a Fire Alarm Telegraph.

The Franklin Telegraph Company propose to build a telegraph line from Meriden to Middletown, Conn. The telegraph line from Meriden to Hartford will be completed by October 1st.

The telegraph line from Duxbury to Boston is owned by the French Cable Company, and the same company have the exclusive use of one wire on the Franklin line between Boston and New York.

The wires for the new fire alarm telegraph in Charlestown, Mass., are all up, and will be in working order about the second week in October.

Improvement in Voltaic Batteries.

A NEW battery for telegraphic purposes, but which may perhaps be generally useful, has been invented by M. Guyot, and is apparently not unlike the ordinary Mennotti sand battery. It consists of a porous earthen vessel, filled with finely powdered iron ore, in which is plunged a cylinder of gas retort charcoal and an ordinary vessel filled with a concentrated solution of common salt, in which is placed a slip of zinc. The only care required to keep such a battery in order is to keep the latter vessel always full of concentrated solution. Further, the solution may be replaced by sand impregnated with it, or by salt in crystals, the humidity of the atmosphere being always sufficient to serve as a solvent.

Telegraphing Pulse-beats and Heart-throbs.

AT the session of the American Association for the Advancement of Science, at Lyceum Hall, Salem, Mass., Friday evening, Dr. Upham announced that a telegraphic wire connecting New York, New Haven, Boston and Salem, had been generously devoted to the use of the Association for the evening, and that arrangements had been made to attempt the experiment of telegraphing from the City Hospital, Boston, the movement of the heart and pulse of a variety of subjects, both in normal and abnormal condition, which should be observed simultaneously in the four cities. The telegraphic instruments were connected with the wire, the physicians in attendance at the City Hospital, Boston, answered "Ready." Mr. Farmer arranged the electro-magnetic recording apparatus, lighted the magnesium lamp (the gas lights being turned down), throwing a beam of light on the little mirror attached to it, and which was thus reflected as a spot of brilliant light upon the wall, visible to the whole audience. In a moment connection was made with the pulse of a healthy subject in Boston, and sixteen miles away. Presently the spot of light vibrates up and down—up and down on the wall; we see the motion in Salem; the audience counts sixty to the minute. Next the wire is connected with the wrists of an excitable young disciple of Esculapius, and we are amused to see the spot of light vibrate up to ninety. The next case was that of the movements of the heart of a patient with chronic pneumonia, followed by one having organic malformation of the heart. In both these cases the irregular action was, of course, accurately indicated.

We were informed from the hospital that the nervous gentleman had consented, for the sake of science, to give an exhibition in his own person of the effects of *veratrum viridi* in reducing the action of the heart.

The drug was taking effect; the connections were made, and the beam of light beats to the slower time of sixty-four instead of ninety. A few minutes later it declined to forty-eight, which, considering the peculiarities of the individual, was startling.

At the close of this interesting session Dr. Groux telegraphed the motion of his own heart to Boston, New Haven and New York, from which reports will be doubtless made by the accomplished observers stationed at those points.

The American Association for the Advancement of Science.

THE annual session of the American Association for the Advancement of Science was held at Salem, Mass., last week.

On Friday, August 10, in Section A, comprising Mathematics, Physics and Chemistry, Prof. G. W. Hough, director of the Dudley Observatory, read a paper "On the Velocity of the Electric Current over Telegraph Wires."

He stated that the law of apparent velocity was directly proportional to the magnetic force of the current. This was shown to be the fact from a large number of experiments made over lines of different lengths. He also stated that the real velocity of the wave had never been measured, but the velocity observed was due to the difference of mechanical effects produced by the current when the line was opened at alternate ends. He also spoke of his obligations to the W. U. Telegraph Co., and especially Mr. C. S. Jones, manager of the Albany office, for the use of the necessary wires, &c.

Superstition in Spain.

The London *Daily News* says:

"Some few enlightened individuals are innocent enough to believe that the days are passed when ordinary human beings should be mistaken for sorcerers and worried to death for witchcraft. It is a great mistake. We know that in many parts of England the belief in witchcraft still flourishes among the ignorant people; and we now hear of an Englishman in Spain being nearly butchered for his supposed complicity with the Prince of Darkness. The event took place in a thriving commercial town, numbering 20,000 inhabitants—Lorca. The people in this neighborhood firmly believe in the existence of certain wizards—mysterious beings, with pale faces and long white beards, who, hid during the day, hunt at night for children, whom they devour. The fat of these children they are said to keep sacredly for two purposes—first, as a sovereign cure for small-pox; and secondly, to grease the wires of the electric telegraph, which is in itself a satanic invention, and would not work at all were it not for the lubricating oil obtained from the bodies of innocent little children."

The Labor Congress and the Postal Telegraph.

AT the Labor Congress in Philadelphia, last week, a resolution in favor of the Postal Telegraph scheme was introduced, but was referred to the committee on resolutions, and was not again heard of during the session of the Congress, which continued several days. It is evident that this project did not meet with favor with this assemblage of the representatives of the working classes. This action, or rather refusal to act, is highly commendable. The proposition was evidently regarded in its true aspect, as one to tax those who have but little occasion comparatively to use the telegraph to pay for those who do.

This Postal Telegraph business is getting to be regarded in its true light, and the more it is discussed the less popularity it is found to possess.

Durant's Nonpareil Relay.

WE would again call the attention of those having occasion to purchase telegraph instruments to the advertisement of DURANT'S Self-adjusting Relay. This relay has been thoroughly tested now for nearly a year, and has proved to be just what its inventor and manufacturer claims for it—a practically self-adjusting relay. A number of them have already been introduced, and Mr. DURANT is prepared to supply them promptly, and warrant them to prove exactly as recommended.

Mr. DURANT, as we are informed, has several other important telegraphic improvements, which he will bring out soon if sufficient encouragement is received.

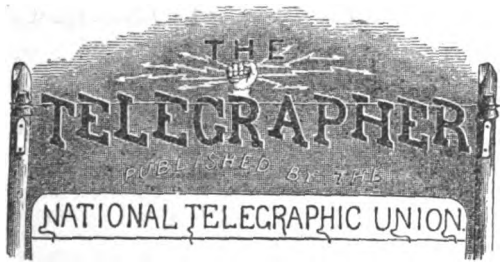
Facetia.

PROF. B——, the eminent electrician, was travelling lately in the cars, when a man came up and asked him for his fare.

"Who are you?" said B——.

"I? my name is Wood; I am a conductor."

"Oh," said the Professor, very quietly, "that can't be, for wood is a non-conductor."



SATURDAY, AUGUST 28, 1869.

J. N. ASHLEY,.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG...Box 248 P. O., Washington, D. C.
 Vice-President..W. P. MERRILL...W. U. Tel. O., Portland, Me.
 Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.
 Recording Sec...W. H. H. CLARK...Box 2839, Philadelphia, Pa.
 Corres. Sec....F. L. POPE.....Box 6138 P. O., N. Y.

National Telegraphic Union.

THE Seventh Annual Convention of the National Telegraphic Union will be held at Portland, Maine, on Wednesday, September 15th, at ten o'clock A. M. It is important that every district should be represented at this meeting, as business of vital importance must necessarily be acted upon.

W. H. YOUNG,
President.

W. H. H. CLARK,
Rec. Sec'y.

THE SIXTH VOLUME OF THE TELEGRAPHER.

WITH the present issue THE TELEGRAPHER enters upon its sixth volume. For over five years the paper has been maintained through all the vicissitudes which attend necessarily upon such an enterprise. It has been sustained against the efforts against it which have from time to time been made by those who considered its existence inimical to their interests. When it was commenced the fate which had overtaken other telegraphic publications in this country was freely predicted for it.

Until within the last year and a half it was not pecuniarily a success, but the excess of its necessary expenditure over its receipts was made up from the treasury of the National Telegraphic Union. At the time its present conductor took charge of it it was sinking from fifty to seventy-five dollars per month. His appeals to the fraternity for support were generously responded to, and from the first of February, 1868, to the present time, there has been no necessity to draw upon the Union treasury for a dollar to defray its expenses, the receipts from subscriptions and advertisements having been ample for that purpose.

In view of the fact that the Western Union Telegraph Company has established a so-called *Journal of the Telegraph*, which is furnished gratuitously to the greater portion of the telegraphic fraternity, this result is just cause for pride and congratulation.

We have no fears for the future of the organ of the profession. It has become a necessity to the practical working telegraphers of the country, who, appreciating its value to them, will continue to generously support it. Its beneficial effect upon the interests of all dependent upon telegraphy for support is too patent to be disregarded or its continued existence imperilled. Through its columns telegraphers can make known their desires, and ventilate any injustice which may be done them. It is powerful for good, and has enabled them to maintain their standing and insure recognition of their important services.

We would take this opportunity to appeal to every telegrapher to enrol his or her name upon its list of subscribers, and aid thereby in securing their just rights

and privileges. It is only a trifle that is asked of each, and who will say that they do not receive a full equivalent for their investment?

We would also call attention to the very liberal offer of premiums to those who will interest themselves in extending the circulation of the paper. They are liberal, and such as can only be justified by a corresponding increase in the circulation of the paper. Under these circumstances may we not confidently anticipate that those into whose hands the paper shall come will at once interest themselves effectively in the good work?

We would also call especial attention to the new feature of our prospectus, which brings the paper within the reach of even the poorest telegrapher. We refer to the offer to send the paper free to any person who shall obtain and forward to us the names and money for four subscriptions. Almost any telegrapher, with a little effort, can secure four subscribers to so popular a paper as THE TELEGRAPHER. We desire that every person engaged in telegraphy shall regard this paper as his or her organ and act accordingly.

We have no especial promises to make for the present volume. The character of the paper will be maintained to the best of the ability of its conductor. We shall continue to receive the assistance of the able gentlemen who have so faithfully aided in giving it its present high standing as a telegraphic organ. Such improvements will be introduced from time to time as may be found practicable and believed to be advantageous; and it should be constantly kept in mind that the more general and liberal the support received the more can the character of the paper be improved.

We shall print a sufficient number of the earlier issues of the present volume to enable us to supply to all new subscribers who may desire them the numbers from its commencement. The early numbers of the last volume were exhausted within a short time after their publication, so that we were unable to comply with requests for back numbers. This unfortunate contingency we shall endeavor to guard against in the new volume.

With these introductory remarks we enter upon the duties and labors attendant upon the publication of the sixth volume, confident that at its close we shall be able to record a success exceeding even that heretofore experienced.

That Steel Telegraph Wire.

THE statement of our San Francisco correspondent, BEAR VALLEY, in regard to the alleged action of a Superintendent of the Central Pacific Railroad Telegraph, in ordering steel wire for a section of the line, and the reply and explanation of GRASS VALLEY, have attracted much attention in telegraphic circles. We have received the following communication from Messrs. L. G. TILLOTSON & Co. on the subject, which exculpates more completely the Superintendent referred to than even the reply of GRASS VALLEY did, from any imputation of lack of professional experience and ability.

The Purchasing Agent of the Railroad applied to TILLOTSON & Co., the agents of the Compound Telegraph Wire Company, to fill the order, but thought the price asked was too high. He then consulted Mr. MOEN, of the firm of WASHBURN, MOEN & Co., wire manufacturers, who had a lot of steel wire on hand, and persuaded him that it was just as good for telegraphic purposes as the compound wire, at much less cost, and the steel wire was accordingly ordered and sent. As is very truly remarked in the subjoined note, neither Railroad Presidents or wire manufacturers know much about the comparative conductivity of different kinds of wire. They know its *strength*, and if it combines lightness and good tensile qualities, it is in their view just what is wanted.

Mr. TILLOTSON, who is, as our readers well know, a telegrapher of many years' experience as an operator, superintendent and builder of telegraph lines, as well as an extensive dealer in telegraph materials, of course knew that steel wire was unsuitable for telegraphic pur-

poses, as did also the Superintendent referred to, who, we are assured, is a telegrapher of experience and ability.

We would, therefore, submit to purchasers of telegraph material, especially of wire, that their best policy is to order through parties who understand the business, and not from ignorant wire manufacturers, whose only interest is to dispose of their wire, without regard to its conductivity or adaptiveness for the service required;

NEW YORK, August 25th.

TO THE EDITOR OF THE TELEGRAPHER.

Your remarks in the last issue of THE TELEGRAPHER, upon the subject of "Steel Wire for Telegraph Lines," fail to do full justice to the Superintendent of the Central Pacific Telegraph lines. This gentleman ordered compound wire for his lines, but the Vice-President and Purchasing Agent of the company here was indisposed to pay the price; and, upon consultation with a certain wire manufacturer, was induced to believe the plain steel wire quite as serviceable, at a considerably less expense, and hence gave the order for the latter. Presidents of railway companies generally have a very limited knowledge of practical telegraphing—wire manufacturers still less. We are confident that we have no Telegraph Superintendents who would not readily distinguish the difference between the two wires in question, and, certainly, if there be any, it is not the gentleman in charge of the Central Pacific lines.

Yours truly,

L. G. TILLOTSON & Co.,
Agent Am. Compound Telegraph Wire Co.

The Annual Convention.

WE print this week the call for the Seventh Annual Convention of the National Telegraphic Union. We desire to call the special attention of District officers to this call, and, if delegates have not already been chosen, impress upon them the necessity for immediate action of their Districts for that purpose.

It is essential that, if possible, every District should be represented at this Convention, as matters of urgent, in fact vital, importance to the Union must come before it for action. It would be painful and disheartening to those who have, from the first organization of the Union, stood by it through good and evil report, if it should now be allowed to go by default, after having been sustained for seven years. We hope that every present member of the Union will take this matter into earnest consideration, and decide whether the Union shall live or die.

It should be recollected that, under the Constitution, as revised at the last Convention, the expenses of the delegates must be defrayed by the districts whom they represent, instead of the Union, as heretofore.

We hope to see an earnest and intelligent assemblage of representative telegraphers at Portland on the 15th prox., whose deliberations and decisions shall be recognized and respected by the telegraphic fraternity as the best and most advisable under the circumstances.

Send in your Lists.

WE have received several letters from parties informing us that they were engaged in getting up clubs of subscribers for THE TELEGRAPHER. We would request all such to send us their lists at once, so as to have the subscriptions commence with the first number of the new volume. They can add to them from time to time afterwards, and receive such premium as the whole number may entitle them to.

Those who design to work for the premiums should so state in their letters covering names and money of subscribers.

Electric Railroad Signals.

ELECTRICITY on the railroads in France is taking the place of human watchfulness. On many lines there are contrivances where the passing of a train is automatically announced to neighboring stations. The cars pass over connecting wires, and the train records itself before and behind, so that its progress and appearance are alike indicated. Our railroad companies should adopt some such system of railroad signals. It would make travelling by rail in this country much less hazardous.

New Patents,

For the week ending Aug. 21st, 1869, and bearing that date.

No. 93,993.—ELECTRO-MAGNETIC SIGNAL APPARATUS. Geo. B. Hicks, Cleveland, Ohio.

I claim, 1. The arrangement of the magnet E and spool in combination with the bell F, and operated substantially as and for the purpose set forth.

2. The application of the magnet E and single spool in connection with a battery for giving signals upon a bell, as set forth.

No. 94,014.—Patented in France, Dec. 14th, 1863. MAGNETO-ELECTRIC MACHINE. Dieudonne Francois Joseph Louun and Eardley Louis Charles D'Ivernois, Paris, France.

We claim a Magneto-Electric Engine, consisting of the bifurcated Electro-Magnetic Armatures, radially disposed upon the rotating shaft, in combination with the stationary magnets, which are initially magnetized, when arranged in such a manner that the current generated in one series of rotating armatures is conveyed to the fixed magnets, and then, on the rotation of the shaft, excites a current in another series of rotating magnets, which can be utilized at will, in the manner and for the purpose described.

MARRIED.

GIBSON—BENNETT.—At the residence of the bride's mother, 51 South Union street, Nashville, Tenn., August 15th, by Rev. Dr. Barbee, N. J. Gibson, of Elginfield, to Miss JENNIE BENNETT.

The bridegroom was for four years agent, at Nashville, of the Commercial News Department of the Western Union Telegraph Company, but is now in charge of the Company's office at Shelbyville, whither he will conduct his fair young bride. May the electrical current of love which pervades their hearts ever thrill as strongly as when they first felt its blissful influence.—*Nashville Banner.*

SHAFER—MARTIN.—At Iowa Centre, Iowa, Aug. 8, by the Rev. Mr. MONKSMITH, Mr. SOLOMON M. SHAFER, of the C. and N. W. Railway and Western Union Telegraph, at Nevada, Iowa, to Miss MARY MARTIN, of Iowa Centre.

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THE LIST OF SUBSCRIBERS TO

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Must be doubled within Three Months.

Our previous offers of Premiums to those who would interest themselves in increasing and extending the circulation of THE TELEGRAPHER

having proved so generally acceptable, and having met with so earnest a response, we have decided to present

A NEW LIST OF PREMIUMS,

even more liberal than those heretofore offered. From past experience, we think we are justified in anticipating, as a result of the following offer, that the subscription list of THE TELEGRAPHER will be

DOUBLED WITHIN THE NEXT THREE MONTHS.

The following Premiums will be open until October 31st, 1869. All Premiums will be forwarded, FREE-PAID, to their destination. For 25 subscribers, we will give to the person sending the names and money a first class No. 1 Box Relay, warranted.

For 15 subscribers, a No. 1 Telegraph Key, either Caton or Self-closing, as may be preferred.

For 10 subscribers, a No. 1 Pony Sounder.

For 6 subscribers, Pope's Modern Practice of the Electric Telegraph and Sabine's Electric Telegraph.

For 3 subscribers, Pope's Modern Practice of the Electric Telegraph.

IN ADDITION TO THE ABOVE PREMIUMS,

we will give to the person who shall send us, by or before October 31st, 1869, the largest number of subscribers, not less than FIFTY, one of

DURANT'S SELF-ADJUSTING RELAYS,

OR

A CATON POCKET INSTRUMENT,

AS MAY BE PREFERRED.

It is understood that subscriptions to be counted for Premiums must be of persons not now on our books; that is to say, renewals of subscriptions will not entitle to participate in Premiums.

Subscriptions must be for one year, or equivalent to that, and at the regular subscription price of the paper,

TWO DOLLARS PER YEAR.

Subscriptions for less than a year will be counted as fractional parts of one subscription.

Remittances may be made by Post Office Order or Registered Letter, at the risk of the paper.

CHESTER, PARTRICK & CO.,
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AND

ELECTRICAL ENGINEERS,
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TELEGRAPH LINES, SIMPLE BURGLAR ALARMS, FOR PRIVATE RESIDENCES, AND BURGLAR ALARMS WITH "TELL-TALE CLOCK," AND OTHER APPARATUS FOR BANKS AND PUBLIC BUILDINGS.

Among other Telegraphic Supplies constantly kept on hand, they are prepared to furnish promptly the following novel articles:

KERITE (OR HORN COVERED) COPPER OR COMPOUND WIRE OR CABLES,

COVERED COMPOUND AIR LINE WIRE, BLASTING APPARATUS, CARTRIDGES, BATTERIES, &c., &c.

CALCIUM LIGHTING APPARATUS, MEDICAL BATTERIES,

INDUCED AND DIRECT CURRENTS; ELECTRO-PLATERS' BATTERIES AND MATERIALS, ELECTRO GONGS, OF ANY DESIRED SIZE OR WEIGHT, ALARM APPARATUS.

PATENT APPARATUS FOR THE MANUFACTURE OF NITRO-GLYCERINE, ELECTRICAL CLOCK WORK, &c., &c., &c.

They guarantee to give satisfaction to all who favor them with orders, in the promptness of execution and in the quality of articles supplied.

Also, have on hand and for sale,

MODERN PRACTICE OF THE ELECTRIC TELEGRAPH.

BY

F. L. POPE.

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AND THE

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CULLEY: Hand Book of Practical Telegraphy, 8vo, cloth... 6 25

POPE: Modern Practice of the Electric Telegraph, 8vo, cloth..... 1 50

NOAD: Manual of Electricity, 8vo, cloth..... 12 00

DE LA RIVE: Treatise on Electricity, 3 vols. 8vo, cloth.... 36 00

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BAKEWELL: Manual of Electricity, 12mo, cloth..... 2 00

SHAFFNER: Telegraph Manual, 8vo, cloth..... 6 50

LARDNER & BRIGHT: Electric Telegraph, 140 illustrations, 12mo..... 1 75

DU MONCEL: Traité de Télégraphie Electrique, 1 vol. 8vo, paper..... 5 00

BLAVIER: Nouveau Traité de Télégraphie Electrique, 2 vols. 8vo, paper..... 10 00

CLARK ON ELECTRICAL MEASUREMENT: 12mo cloth.. 3 00

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THE ATLANTIC TELEGRAPH, Its History, &c.: 12mo, cl. 1 00

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NOAD'S INDUCTORIUM: 18mo, cloth..... 1 50

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BOND'S HAND-BOOK OF THE TELEGRAPH: 18mo, cl... 0 50

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Glass Insulators, Brackets, &c.

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" the best Manufacture of Plain and Galvanized Iron Wire.

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OF
THE ELECTRIC TELEGRAPH,
Publishers of Prof. J. E. SMITH'S
MANUAL OF TELEGRAPHY.

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AMERICAN COMPOUND TELEGRAPH LINE WIRE.

Requires from one half to two thirds less poles than Iron Wire.

Economy of time and money in construction and reconstruction.

Durability greatly exceeds best quality of Galvanized Iron Wire.

Decreased liability to breakage from sleet and extreme cold weather.

Great improvement in the working of Lines in any condition of weather, this resulting directly from superior conductivity and insulation.

The above claims have been fully and fairly demonstrated, and that relating to sleet more especially, during the past winter.

Numerous and severe sleet storms, in sections where the Compound Wire is in use, have proved beyond question its great superiority.

One of the most severe of these storms (of the effects of which a very satisfactory report has been received by the company) occurred about the middle of December, in the Sierra Nevada mountains, and during which a No. 9 iron wire, on the lines of the ATLANTIC AND PACIFIC STATES TELEGRAPH COMPANY, was broken eighteen times within the space of one mile, while a COMPOUND WIRE by its side remained uninjured.

Other testimonials of like character have been received, all of which are conclusive that the merits of the COMPOUND WIRE have not been over-estimated.

Address—

American Compound Telegraph Wire Co.,

ALANSON CARY, Treasurer,

No. 234 West 29th St.,

New York.

Agents in New York,

L. G. TILLOTSON & CO.,

11 DEY STREET.

NATIONAL TELEGRAPHIC UNION

Life Insurance Bureau.

THE NATIONAL TELEGRAPHIC UNION, by authority of its special charter, granted by the State of New York, proposes to insure the lives of all persons connected with the Telegraphic business, under the following rules and regulations:

Applicants for insurance must be connected in some capacity with the Telegraphic business, must be not less than eighteen years of age, in good health, and able to earn a livelihood. Every applicant shall pay an entrance fee of two dollars, one dollar of which shall be reserved for creating a permanent fund, and one dollar towards the amount to be paid the heirs of the first insured person deceased, who will receive as many dollars as there are persons insured.

Whenever a death occurs among those insured, an assessment of one dollar and ten cents will be levied upon all. This dollar goes to the widow, orphans, or heirs of the next insured party deceased, and the ten cents to be applied to the payment of current and necessary expenditures.

Applications must be made to the Actuary, in writing, accompanied by a certificate, signed by not less than two persons in the Telegraphic business, of good character, that they know the applicant is fully qualified under the preceding rules.

A small annual assessment, not to exceed one dollar, may be necessary to cover working expenses after the first year.

This plan of insurance will be conducted under the supervision of the Executive Committee of the N. T. U., and it will be their aim to make it as inexpensive as reliability and security will allow. It is unnecessary to make any extended remarks, or any comparisons of the great advantages this plan affords for the payment of ready money, at the event of death, over Life Insurance Companies.

Parties wishing to insure should write out the following questions with their answers thereto:

- What is your name?
- What is your age?
- Where is your residence?
- What is your occupation?
- Have you any constitutional disease or debility?

Sign the above statement, and forward it to the Actuary, with a certificate signed by two persons connected with the Telegraphic business, that the applicant is well known to them, and that the answers given by him to the above questions are correct?

Applications may be sent to

A. L. WHIPPLE, Actuary,

Box 39, P. O., Albany.

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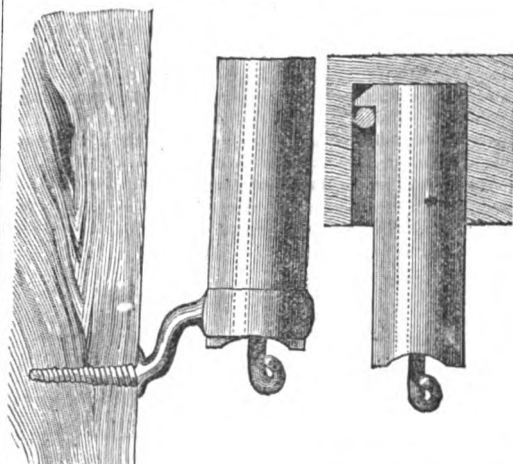
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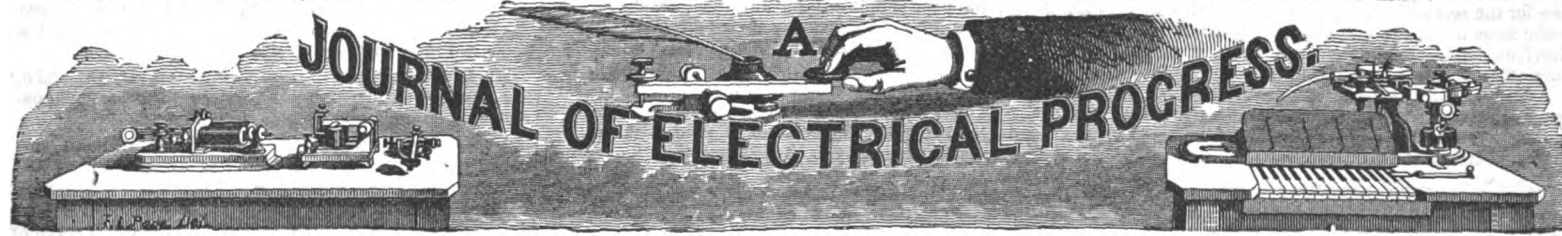
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THE TELEGRAPHER.



Vol. VI.—No. 2.

New York, Saturday, September 4, 1869.

Whole No. 164.

(From *Hours at Home*.)

FIRST WEEK OF THE TELEGRAPH.

In the fall of 1850 Mr. Alfred Vail, of Morristown, N. J., gave the writer an account of the receipts of the telegraph at the Washington office during the first four days of its operation, after it had been taken under the patronage of the government; and, at his request, Mr. Vail afterwards wrote it down. That record is now before him, and from it the present statement is made, mostly in the words of the manuscript:

"The telegraph was first put in operation between Washington and Baltimore in the spring of 1844, and was shown without charge until April 1, 1845. Congress, during the session of 1844-45, made an appropriation of \$8,000 to keep it in operation during the year, placing it, at the same time, under the supervision of the Postmaster-General. He, at the close of the session, ordered a tariff of charges of one cent for every four characters made by or through the telegraph, appointing also the operators of the line—Mr. Vail for the Washington station, and Mr. H. J. Roberts for Baltimore.

"This new order of things commenced on April 1, 1845, and the object was to test the profitability of the enterprise. The receipts for April 1-4, inclusive, were as follows:

"It should be borne in mind that Mr. Polk had just been inaugurated, and, as is always the case on the advent of a new administration, the city was filled with persons seeking for office. A gentleman of Virginia, who stated that to be his errand to the city, came to the office of the telegraph on the 1st day of April, and desired to see its operation. The oath of office being fresh in the mind of the operator, and he being determined to fulfil it to the letter, the gentleman was told of the rates of charges, and that he could see its operation by sending his name to Baltimore and having it sent back, at the rate of four letters or figures for a cent, or he might ask Baltimore regarding the weather, &c. This he refused to do, and coaxed, argued, and threatened. He said there could be no harm in showing him its operation, as that was all he wanted. He was told of the oath just taken by the incumbent, and of his intention to keep it faithfully; and that, if it was shown to him by the passage of a communication gratuitously, it would be in violation of his oath of office. He stated he had no change. In reply, he was told that if he would call upon the Postmaster-General and obtain his consent that the operation should be shown him gratis, the operator would cheerfully comply to almost any extent. He stated in reply that he knew the Postmaster-General, and had considerable influence with some of the officers of the government, and that he (the operator) had better show it to him at once, intimating that he might be subjected to some peril by refusing. He was told that no regard would be paid to the extent of his influence, &c., be it great or little; that he did not think he was at liberty to use the property of the government for individual benefit when under oath to exact pay, and cited the rules of the Post-office in relation to the carriage of letters, but that he was willing to do as directed by the Postmaster-General (Hon. Cave Johnson). The discussion lasted almost an hour, when the gentleman left the office in no pleasant mood.

"This was the patronage received by the Washington office on the 1st, 2d, and 3d of April. On the 4th the same gentleman "turned up" again, and repeated some of his former arguments. He was asked if he had seen the Postmaster-General, and obtained his consent to his request, to which he replied he had not. After considerable discussion, which was rather amusing than vexatious, he said that he had nothing less than a twenty-dollar bill and one cent, all of which he pulled out of his breeches pocket. He was told that he could have a cent's worth of telegraphing, if that would answer, to which he

agreed. After his many manoeuvres and his long agony the gentleman was finally gratified in the following manner: Washington asked Baltimore 4, which means, in the list of signals, "What time is it?" Baltimore replied 1, which meant "1 o'clock." The amount of the operation was one character each way, making two in all, which, at the rate of four for a cent, would amount to half a cent exactly. He laid down his cent, but he was told that half a cent would suffice, if he could produce the change. This he declined to do, and gave the whole cent, after which, being satisfied, he left the office.

"Such was the income of the Washington office for the first four days of April, 1845. On the 5th twelve and a half cents were received. The 6th was the Sabbath. On the 7th the receipts ran up to sixty cents; on the 8th to \$1.32; on the 9th to \$1.04. It is worthy of remark, concludes Mr. Vail, that more business was done by the merchants after the tariff was laid than when the service was gratuitous."

The above details may strike many as very trifling and undignified. So they are in themselves; but therein consists their charm and their relevancy to the subject in hand. Deep in our nature there is a principle that loves to contrast small beginnings with grand results. History is full of this. Development is characteristic of the works of God, and of the works of man as well. Nothing great ever comes all of a sudden. To the ignorant and unobservant it may seem so, but it only seems, for it is not so. It was not thus with the commonest implement of the peasant—the plow, for instance. Only of late has this—the pioneer and the honored symbol of civilization—risen to its present advanced degree of improvement, for doubtless it has not yet reached perfection. So of every other in the service of man. The telegraph is but a particular instance of a general law—development. To note a single point in its germ period was all that the writer proposed to do.

(From the *Boston Advertiser*.)

Two Hours with the French Cable.

A SMALL party of scientific gentlemen, members of the American Association for the Advancement of Science, which closed its session at Salem last week, received and accepted an invitation on Thursday, 26th instant, to visit the cable office in Duxbury. From Boston to Kingston station by rail thirty-three miles, thence by coach five miles, brought the party to the landing. In an old but well-preserved clapboard mansion of that quaint old town were found the headquarters of this new and wonderful highway. The visitors were cordially welcomed by the manager, Mr. Brown, and were at once brought into the presence of the flitting, flame-like image, which indicated, in symbols, on a graduated screen, the thoughts working at that instant on the other side of the Atlantic. Interpreting the fitful tremor of the image, or line of light, one inch in length and one eighth of an inch in breadth, the youthful interpreter, who did not look the wizard that he was, calmly read, for transcription by his assistant, a message in which occurred at intervals the words "New Orleans"—"Citizens," &c., &c. While inspecting the apparatus the members of the party received the following message fresh from France, sent expressly to them:

"TO DUXBURY, FROM BREST—Time, 5.20 P. M. [Paris Time.]"

"The company present their compliments to the gentlemen assembled at Boston, and hope to be able to send them news of the great international boat race that will be gratifying to both nations."

The usual rate of transmission is about ten or twelve words per minute. Looking for the mechanism by which these wonderful results were obtained, the inquiring visi-

tors observed on their right, placed on a marble pedestal, a medium sized spool of silk-covered copper wire, said to consist of several thousand turns or convolutions, in the centre of which spool, suspended by a single silk-worm fibre, was a minute mirror, attached to a little magnet made from a piece of watch spring. From a lamp properly placed and shaded a beam of light was thrown upon this mirror, and from the mirror was reflected, two hundred times enlarged, upon the graduated screen in front of the interpreter, the flame-like image already mentioned. In transmitting from Duxbury to Brest the operator, with his right hand, makes use of two keys or springs, one of which, being pressed, causes at Brest a deflection in a similar mirror, sending the image-flame to the right, while pressing the other key deflects the mirror at Brest in the opposite direction, sending the image to the left. Its indications are thus interpreted: A jerk or flitting once to the right and then once to the left denotes the letter a; a flitting once to the right and then three times to the left denotes the letter b; and thus, letter by letter, the words are spelled.

Passing to an adjoining room, the delicate instruments used for testing the electric conduction of the cable are shown—among which are condensers and batteries, rheostats and shunts, bridges, switches and plugs, and crowning all, the wonderful static galvanometer of Sir William Hamilton. But possibly it would weary our readers to tell of ohms and megohms, farads and megafarads, volts and microvolts, and all the terminology of conduction, resistance, electrostatic capacity, and continued electrification. It may, however, gratify them to learn that the insulation of the deep-sea cable, between Brest and St. Pierre, has more than doubled in efficacy during the short month which has elapsed since this cable was first committed to the embraces of Old Ocean—as is evinced by the fact that soon after it was laid the insulation resistance rose to 2300 megohms, and has since been gradually increasing until it is now 5000 megohms per nautical mile. This improvement in the insulation of the deep-sea cable is believed to be mainly due to the coldness or diminished temperature to which it is subjected at great ocean depths. The insulation resistance of the portion of the cable connecting Duxbury and St. Pierre is much less, namely, 1500 megohms per nautical mile.

If one would inquire of a cable electrician what is a megohm? he might with propriety be told that it was a million ohms. Should he still further inquire—but what is an ohm? a suitable reply would be, it is the yardstick of the electrician, by which he measures the electric condition of conductors, and which may be represented by a round wire of pure copper, one-twentieth of an inch in diameter and 240 feet in length, at the temperature of 60 degrees of the Fahrenheit thermometer; while a megohm, by which he measures the resistance of insulators, is a unit, the length of which is a million times as great.

After being duly initiated into the interesting mysteries of cable working and cable book-keeping, the members of the party partook of a sumptuous repast, given by the gentlemen in charge. During this repast they were agreeably interested by thrilling accounts of various incidents and hairbreadth escapes during the eventful voyage in laying the cable.

Mr. Brown and Mr. Gaines are gentlemen of long experience in connection with the Malta and Alexandria cables. Mr. Smith, who represents the interest of the Telegraph Construction and Maintenance Company, has assisted in laying most of the important cables, from the first one that crossed the channel to this last great triumph. The number of persons engaged in conducting the affairs of the office, and of the land lines, are about a dozen in all—some of them being on duty at all hours of the day and night—for it must be remembered that when it is midnight at Duxbury it is daybreak at Brest (France), so that a telegram dated like the one given above, at five o'clock and twenty minutes, P. M., Paris

time, is really sent at 12 o'clock and thirty minutes P. M. Duxbury or Boston time. It may be deemed worthy of remark that in the transmission of messages of business for the public the time recorded is that of Paris, in business for the service of the cable company, Greenwich time—the same as on the original cable between Ireland and Newfoundland—and in the local business of the Duxbury office, Boston time.

After cordially thanking the courteous and efficient manager and his associates, the gentlemen constituting the party terminated their long to be remembered visit at the Cable House at Duxbury.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all Telegraphic subjects, without distinction of person or opinion.

No notice will be taken of anonymous communications.

The Salary Question.—Increase of Subscriptions to The Telegrapher.

WASHINGTON, D. C., Aug. 29, 1869.

TO THE EDITOR OF THE TELEGRAPHER.

ON Tuesday evening, August 24th, a bill was introduced in the Board of Common Council in this city regulating the compensation of the superintendent and operators of the Fire Alarm Telegraph.

The bill provides for the salary of the superintendent to be at the rate of two thousand dollars per annum, and that the compensation of the operators shall be at the rate of fifteen hundred per annum; the increase to date from the first day of July, 1869. The bill was referred.

We are glad to see a disposition to pay the Fire Alarm operators for their labor, but they seem to think this will be the last heard of this bill.

Will not some of the telegraph companies take a similar step toward an increase of salaries. It is needed by many operators who are receiving a salary barely sufficient to keep body and soul together. A movement of this kind, on the part of the different companies here, would be very highly appreciated, now that Congress will soon convene, and operators may expect hard work.

A movement has been made here toward supporting the organ of all telegraphers, "THE TELEGRAPHER," and we hope the editor will receive a good list from this quarter before the publication of the next number.

We learn from those with whom we have conversed that the fraternity have determined to take a new start toward the support of their organ with the commencing number of the sixth volume.

We hope this movement will not all end in talk, but that the fraternity will come forward, and with the cash for their subscriptions. We notice by reports in THE TELEGRAPHER that our western co-laborers are far ahead of us, but we hope to present a list equal to theirs, if not ahead. We ask every member of the Washington district to use every effort to secure subscribers, and let us show that we appreciate our organ, and are determined that it shall receive such a support as shall strengthen and sustain it in its labors for the advancement of our interests.

It is understood that quite a large club of subscribers is being raised in Baltimore also, and from all parts of the South reports of an increasing interest in the paper, and an increasing subscription list in that section, are received. We hope that every Southern operator will co-operate in this good work, and see to it that substantial evidence is furnished of a disposition to effectively maintain the organ and advocate of the practical telegraph laborers of the country, THE TELEGRAPHER. SPRING.

The Western Union Dead-Head System.—Cabalistic Letters and Figures in Messages.

TO THE EDITOR OF THE TELEGRAPHER.

FANCY yourself the recipient of a telegram by the Western Union line, upon which charges have been paid or are to be collected, or which is more probable still, that has come under one of the few franks issued by the company—few comparatively, for out of a population of thirty millions I don't suppose there are more than five thousand franks in use, or one to every six thousand persons. In passing, Mr. Editor, I protest that, in a free country like ours, that is deservedly the boast of its citizens and the longing of the oppressed of all lands, one free pass over the wires of the Western Union Company to every six thousand persons is a mockery to the idea of freedom, and is a fit subject for congressional action. Perhaps simply calling the attention of the officers of the Western Union Company to the alarming scarcity of these artistically lithographed cards will suffice. It may be we view it in different lights, but it seems to me that the company

has made an error in the distribution of its passes. Men who are able to pay for their messages hold passes, and poor people have to pay full rates. Congress will see that this order is reversed when Hubbard & Co. get their lines going; the poor people will have the passes then, and the rich folks will be obliged to pay their telegrams.

But I was going to ask, Mr. Editor, if after receiving a telegram, and wading through number, and time, and office signals, and check, and operator's letters, and the delivery clerk's numbers, and other cabalistic characters, before you can get to the contents of your telegram, the thought had not struck you, as it has me, that the Western Union Company was in a great advertising enterprise; that some plantation bitters man had hired the use of the company's blanks to spread before the face of the public strange combinations of letters, and figures, and hieroglyphical marks, meaningless to the uninitiated, but pregnant with treasures of meaning to those who possess the key to unlock them? Haven't the Drakes and the Helmbolds prostituted the rocks, and hill-sides, and fences of our fair land to the base uses of advertisement, forcing the monuments of creation to bear record of their doings? and would they now make the telegram serve them as a medium for further notoriety?

These characters strike people differently. One man comes with his telegram to the office and tells the clerk that he understands it all but these words and figures in the corner. Another thinks that upon his answer he must inscribe the same formula. One man insists upon adding to the "10 Dh pass 8769" the operator's initials, "F. and S." The safeguards thrown by the company around their business, that it be done properly, and the checks upon their employees, to detect the incompetent, should not be considered as grievous to be borne; but it is plainly to be seen that we are fast becoming entangled in a web of red tape, which the sly spiders at 145 Broadway are spinning around us.

The following amusing error transpired lately in the neighborhood of the Central City: A message addressed to a prominent railroad official, who sports V. P. after his name, passed the office—"To D. T. ——— 46, N. Y. C. R. R." Yours, DOT DASH.

Support The Telegrapher.

TO THE EDITOR OF THE TELEGRAPHER.

Do the American telegraphers appreciate as they should the great privilege and advantage they enjoy over their professional brethren in other countries, in having an organ through which they may be heard on their own behalf? For me THE TELEGRAPHER appears to be a necessity, and I should as soon think of doing without victuals and clothes as without our paper.

I cannot understand the feeling which induces a telegrapher, when asked to subscribe for our paper, to decline on the plea that he cannot afford it. Why, as a matter of fact, no telegrapher can afford to be without it. It keeps us informed on current telegraphic news, what progress the science of electricity and art of telegraphy is making; brings to our notice all news and valuable telegraphic inventions and improvements, and gives us counsel and advice from time to time which cannot but be of much value to us. Through its columns, also, we learn about friends and former intimate professional associates who have, perhaps, wandered away from us across the continent; and it, moreover, condemns the numerous frauds and swindles which corrupt and speculating telegraph harpies are constantly endeavoring to perpetrate upon the profession and the public. From the first number to the last week's issue I have taken and read THE TELEGRAPHER, and feel that the trifling expense has been returned to me a thousand fold.

I notice that you propose to the friends of the paper to make an effort to double its circulation. It would seem as though this might easily be done. It must certainly need only a proper presentation of the claims of the paper to the confidence and support of any telegrapher, not now a subscriber, to secure the enrollment of his name on your list.

I trust that our friends will take hold of this matter with energy, and the determination that THE TELEGRAPHER shall become a welcome weekly visitor at every telegraph office in the country.

A LIFE SUBSCRIBER.

PERSONALS.

Mr. J. J. DICKEY, of Chicago, Ill., has been appointed General Superintendent of the Union Pacific Telegraph Lines.

Mr. ALMON B. SMITH has been transferred from the Montreal to the Hamilton, Ontario, office of the Montreal Telegraph Company.

Mr. D. MAREAN, of the Western Union Washington office, has gone to Pennsylvania for two weeks.

Mr. M. L. HELLINGS, operator at the Baltimore and Ohio R. R. Depot, Baltimore, Md., left last week for Bremen on one of the B. & O. R. R. steamers, on a month's leave of absence.

Mr. A. H. KANODE, of the Western Union Baltimore office, is absent on a two weeks' vacation, to visit his home in Frederick County, Md.

Mr. R. W. BENDER, of the Washington, D. C., office, has returned to duty after several weeks' absence, apparently much improved by his vacation.

Mr. JAMES NEWELL has just returned from a two months' leave of absence, and has again resumed his duties in the New Orleans, La., office.

Mr. WM. A. L'HOMMEDIEU, chief operator of New Orleans office, left on the first inst., on a month's leave of absence to visit his northern friends.

Mr. J. C. BUSH, from the Macon, Miss., Western Union office, takes the situation recently vacated by Mr. J. E. LYON in the New Orleans, La., office.

Mr. GARDINER G. HUBBARD, the enthusiastic advocate of the Postal Telegraph project, is on his way to San Francisco via the Mississippi Valley, preaching the postal telegraph doctrine *en route*.

Mr. GEORGE OTIS has been transferred from the Nashville to the Memphis, Tenn., office of the P. & A. Telegraph Company.

Mr. L. C. WEIRS, agent of Adams' Express at Cincinnati, Ohio, desires the address of PHILIP DUESNER, who was in 1864 and 1865 operator at Decatur, Ala.

Mr. JAMES E. LYON has resigned his position in the Western Union Office at New Orleans, and received the appointment of superintendent's clerk on the Miss. Central R. R.

Mr. W. B. SUMMERS has resigned his position as operator to accept a clerkship in the ticket office at Bryan, U. P. R. R.

Mr. JOHN KERN has accepted a position on the W. U. Line at Sweet Water, W. T.

Mr. OLLIE WRIGHT has returned from Nevada and has accepted a position as operator in Wahsatch office, U. P. R. R.

Mr. SHELDON has been appointed agent and operator at Creston Station, U. P. R. R., vice J. A. LIED, resigned.

Mr. GEO. MOONEY is *subbing* for A. H. LEE at Red Desert, U. P. R. R.

Mr. S. J. CAREN, for several months filling the position as agent and operator at Green River, was shot and instantly killed, August 14th.

Mr. JOHN CAMPBELL has been appointed agent and operator at Green River, to fill Mr. Caren's place.

Mr. M. TOWNE, train despatcher at Boone, Iowa, accompanied by his beautiful young wife, is spending a few days amidst the cool breezes of Lake Superior.

CHAS. K. SKINNER has resigned his position as night manager at Boone, Iowa, and is now, *subbing* for L. G. BANGS at Glidden.

Mr. FRED. HIRST has been transferred from the Western Union office at Goshen, Indiana, to South Bend, Indiana.

Mr. N. S. ROOT, who has been absent East on a visit, has returned and resumed his duties in the Council Bluffs, Iowa, office.

Mr. E. N. SNIDER, of the Clinton, Iowa, Western Union office, has returned from his recent trip, and resumed his duties as operator, and as agent of THE TELEGRAPHER and POPE'S *Modern Practice of the Electric Telegraph*.

Electricity is Motion.

At the meeting of the American Association for the Advancement of Science, at Salem, Mass., on Wednesday last, Dr. P. H. Van der Weyde gave his reasons for believing that electricity is not a self-existent fluid, but a mode of motion of matter—a theory to him no more startling than that heat is mere motion, and one which we had even more right to believe. It is generally asserted that a vacuum is a good conductor, but the speaker denied that it is a conductor at all. Rarefied air is really present in the common experiments with a vacuum, and this is a conductor, as is illustrated by the aurora borealis. Matter is really, then, the medium of conduct. Without air there is no sound; without a transmitting medium there is no conduct of electricity. As caloric is a vibratory motion of matter electricity is a rotatory motion. Considerable discussion followed this paper, the members present not being willing at once to accept the theory.

A CLOCK in the Boston, Mass., office of the French Cable Company gives the time in Paris.

An object of attraction—A magnet.

THE TELEGRAPH.

[By Atlantic Cable.]

New Submarine Cables Projected.

A SUBMARINE telegraph from Rangoon, by way of Singapore to the island of Java, and thence to China, is projected.

Paris, Sept. 1.—Ratifications of a convention for laying a telegraph cable between Europe and South America have been exchanged.

The Great Western Telegraph Company.

We have received a copy of a circular issued by the Directors of the Great Western Telegraph Company, under date of Chicago, August 24th. It states that:

"At a meeting of the Board of Directors, Wednesday, August 11th, 1869, the reports of the president, secretary, treasurer, and superintendent, giving in detail its affairs to the 31st day of July, 1869, were made, and a committee was appointed to examine the same, prepare a brief circular, stating the facts, progress, and prospects of the Company.

After a full review of the subject, and a careful examination of the books, the committee reported that there were in operation, on the 31st day of July 1869, 333 miles of line; that there were under construction between 300 and 400 additional miles, which would soon be completed, and preparations making to press the whole line with vigor.

That the construction is of a superior kind; that the instruments, batteries, and materials used are of the best and most approved character, particularly the American compound wire.

That, unlike most other new enterprises of similar magnitude, in their early construction, the Company is without a dollar of debt; that the lines already built, though but a fraction of those contemplated, and furnishing communication to only a limited number of points, none of which except Milwaukee are of large commercial importance, are already paying a profit which is being passed to dividend account; that the net earnings of the Milwaukee division for the past quarter have been at the rate of eighteen per cent. per annum on its cost, and that the business is still increasing.

That arrangements of an extensive character for connection with other independent lines now extending to eighteen states, also, by the French Cable, to all Europe, have been made, the result of which, heretofore comparatively unfelt, must inevitably in the future, as the lines extend, and the more important business centres are reached, greatly enhance the earnings.

And finally, that the operations of the Company, as business shows, have been administered with a discretion and energy, which, coupled with the astonishing growth of telegraphing, offer favorable guarantees of financial success and entitle it to confidence, whether considered as a new and needed means of facilitating communication in the West, as an additional accommodation to the public, or regarded as an investment."

Fire Alarm Telegraph.

THE Cambridge, Mass., Fire Alarm Telegraph, which is being built by Gamewell & Co., will shortly be ready for use. A striking apparatus has been placed in the belfry of the Methodist church on Howard street, and thirty boxes, constructed on the automatic principle, have been located in different places about the city.

Gamewell & Co. are also building fire alarms at Charlestown, Mass., and Dayton, Ohio, and are now engaged in making contracts with several other municipalities for the introduction of the American Fire Alarm Telegraph system, which has met with unequalled approbation wherever introduced, and is doubtless the best and most effective system as yet brought into practical operation in the world.

Practical Annihilation of Time and Space.

The great race between the Harvard and Oxford boats on the Thames, above London, took place at 14 minutes 6½ seconds after 5 o'clock P. M., on Friday, August 27th, and was won by the Oxfords in 22 minutes 40½ seconds, finishing the race 36 minutes 47 second past 5 o'clock. The news was received in this city at 4 minutes past 1 o'clock, P. M., by the old Atlantic Cable, about 23 minutes after the race was decided.

A Legal Decision.

A DESPATCH from San Francisco, Cal., of August 27th, states that the Supreme Court of Nevada has decided that the telegraph is a branch of commerce, and therefore under the control of Congress, in the same manner as other kinds of commercial intercourse among the several States.

A New Atlantic Telegraph.

CONCESSION FOR A LINE BETWEEN GERMANY AND THE UNITED STATES.

A CONCESSION for laying a new Atlantic Cable between Germany and this country has been granted by Count Bismarck, the Chancellor of the North German Bund, to Count Oscar Reichenbach, Dr. Adolph Lasard, both of Berlin; James Lyster O'Beirne, M. P., and J. George Cook, of London. It is dated March 12, 1869, and provides for the laying of a submarine cable between Northern Germany and the United States, the landing of that cable at a suitable point of the North German coast on the North Sea, and the construction of all appliances required for working the cable within a telegraph station to be erected near the landing place, and is subject to the following stipulations:

"The Chancellor of the North German Bund reserves to himself the right of selecting the spot at which the cable is to be landed and connected with the telegraph lines of Northern Germany. He will undertake the care of guarding against the cable being maliciously injured or damaged by vessels. The incorporators may lay the cable direct, and without touching any other territory, or eventually, via England and Newfoundland, to any point between New York and Boston. They also have the option of either laying a new cable, or, in order to establish the connection, of buying any submarine cables already existing. In the latter case the Chancellor is to have the right, before the purchase of the cable, to cause the same to be examined as to its working capacity, as well as to the dangers it may be exposed to, and to prohibit, when found necessary, its being purchased. The incorporators are permitted to form connection with the Indo-European Telegraph Company for the interchange of telegrams between America and Asia or Australia.

"The Chancellor of the North German Bund will issue the regulations regarding the transmittance and exchange of cable telegrams. Telegraph officials of the Bund will be employed at the landing station, in order to deliver the telegrams coming from the interior to the officers of the incorporators, and to transmit the telegrams received over the cable to their addresses. For the connection with the telegraph lines of the interior, and especially for direct lines to Hamburg, Bremen and Berlin the North German Bund will make arrangements; respecting telegrams from India, via England to America, the incorporators are to come to an understanding with the Indo-European Company. The telegraphic communication is subject to the rules laid down by the International Telegraph Convention at Vienna (July 21, 1868), and to any further alterations through international conventions; for the transmittance of telegrams over this cable, however, no higher charges shall be made than those on any other transatlantic cable. Government despatches from the President of the North German Bund shall have preferences over other despatches.

"The cable is to be constructed in the best known manner, and its manufacture is to be commenced within six months after the date of the concession, and the whole line is to be completed within two years after that date. If required by an increase of traffic, or if the cable should get out of working order, a new cable is to be laid within eighteen months after the Chancellor of the Bund shall have so directed. An interruption of two years in working the cable shall cause the concession to become null and void. The incorporators shall make a deposit of \$100,000, and within six months thereafter shall show subscriptions for the cable to the amount of 9,000,000 thalers, which capital stock may be raised to 12,000,000 thalers. The value of cables already laid and purchased from other companies may be deducted from that amount. The concession expires after the lapse of twenty-five years, unless a new agreement shall have been entered into as regards the same. Any differences of opinion between the Chancellor of the North German Bund and the incorporators shall be decided by the arbitrament of three judges, to be nominated for that purpose from the Prussian Supreme Court."

Telegraph Wires Broken Down by Ice.

A DESPATCH from Mount Washington, New Hampshire, Sept. 1st, reports a heavy storm Tuesday night. Ice formed on the telegraph wires two inches in thickness, breaking them down in some places. The thermometer on the mountain fell to 28 degrees.

The British Association for the Advancement of Science.

THE British Association for the Advancement of Science met at Exeter on the 18th instant. Professor Stokes, the President elect, delivered his inaugural address, and gave a full account of the origin and purposes of the Association, which may be briefly stated to

be the giving of a more systematic direction to scientific inquiry and the organizing of means for the prosecution of researches which require co-operation. Professor Stokes also said that the grants for defraying the expenses of such researches, up to the year 1867, amounted to £29,288 8s. 1d.

Electric Lights on the Erie Railway.

THE Erie Railway Company are about to illuminate the whole of their road on a novel plan. From New York to Buffalo it is designed to apply the electric lights to all of the locomotives and also to the stationary lamps at the ferries, within the tunnel, and at every dangerous curve along the route.

The arrangements for manufacturing the electric lamps are already completed, under the superintendence of Mr. E. C. Morse, who claims to have made several valuable improvements in connection with the electric light. One invention is a so-called "self-sustaining" battery, and another is a device for making the carbon points of the light burn for months without perceptibly wasting away. The light will illuminate the track for three miles ahead, so that, where the road is straight, the engineer can discern a man or similar sized object as far as his eyesight can reach. The electricity required for actuating the locomotive lamps will be collected by the friction of the wheels as the trains are in motion.

Two lamps will be used for lighting the ends of the Bergen tunnel, with one in the middle. Other lamps will be stationed at each end of the Pavonia ferry; these will throw a broad belt of light across the North River, so intense that on the darkest night there will be no danger of collisions on the water. It is also proposed to fill Twenty-third street, New York city, every night with a flood of white light, from the North River to the Fifth Avenue Hotel.—New York World.

New Patents.

For the week ending Aug. 31st, 1869, and each bearing that date.

No. 94,178.—PRINTING TELEGRAPH. John Blackie, New York, N. Y. I claim, 1. The segmental formed detent S, upon the arm a, operating in the manner and for the purpose as set forth.

2. The stop-arm a'', upon the arbor of the fly f, in combination with the segmental hook or detent S, as and for the purposes set forth.

3. The combination of the segmental formed detent S, arm a, detaining stop C, and fly f, operating substantially as set forth.

4. The combination of the arms a' and a'', pivoted at the point n', and operating as and for the purposes described.

5. In combination with the printing surface, the striking apparatus, consisting of the lever St, arm A', and hammer b.

6. In combination with the striking apparatus, the cam m, or its equivalent, and the spring Sp'', operating as and for the purposes set forth.

7. The stop-arm a'', pivoted at n', so as to act in the manner and for the purposes named.

No. 94,198.—ELECTRO-MAGNETIC ALARM FOR RAILROAD CARS. Webster Gillett, Ypsilanti, Mich.

I claim, 1. The transverse actuating levers G, stem J, and spring a, as arranged in combination with the circuit-breakers L, in the manner substantially as and for the purpose set forth.

2. The transverse actuating levers G, circuit-breakers L, as arranged in relation to and in combination with the battery C and signalling apparatus O, in manner substantially as described, and for the purpose specified.

No. 94,329.—PRINTING TELEGRAPH. Charles T. Moore, White Sulphur Springs, West Va.

I claim, 1. The combination, with a set of keys or other instruments, arranged substantially as described, for closing the circuit of a breaking toothed cylinder and a printing cylinder, arranged to be operated simultaneously with, and relatively to the breaking cylinder, by means substantially as specified.

2. The combination, with a set of keys, arranged to open the circuit, as described, of a toothed breaking cylinder, and a set of weighted actuating gears d2, substantially as specified.

3. The combination, with a set of keys, arranged to open the circuit, as described, of a toothed breaking cylinder, and a spring or weight-actuated indicating apparatus, arranged for operation simultaneously with and relatively to the said breaking cylinder, substantially as specified.

4. The combination, with the bars c and cl, for opening and breaking the circuit of the keys b, catch-levers c3, pawl dd, vibrating bar d7, and breaking cylinder d, all substantially as specified.

5. The combination with the type cylinder e, arranged for rotation, as described, of the pressing levers f1, toothed cylinder f5, and armature, when arranged substantially as specified.

6. The cut-out i, arranged for engaging with the wheel f4, to prevent the movement of the type cylinder, substantially as specified.

Recent British Patents.

METHOD of adjusting and fastening telegraph line wires. CHARLES WM. SIMMONS.

Improvement in cables for the transmission of electrical currents, ALEXANDER MELVILLE CLARKE. Provisional protection for six months.

Machinery for perforating paper strips, to enable them to be employed for transmitting electric telegraph signals. PEARSON HILL.

Improvements in appliances or instruments for finding and for picking up submarine cables, and apparatus connected therewith. ROBERT WILLCOX.

Improvements in galvanic batteries. JOSEPH SMITHERS. Provisional protection for six months.

Improvements in telegraphic cables. ALFRED FOUCAULT. Provisional protection for six months.

IMPROVEMENTS IN TELEGRAPHIC WIRE INSULATORS.—William Robert Lake, London. Provisional protection for six months.



SATURDAY, SEPTEMBER 4, 1869.

J. N. ASHLEY,.....Publisher and Editor.

OFFICERS OF THE NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.
Vice-President. W. P. MERRILL...W. U. Tel. O., Portland, Me.
Treasurer.....A. L. WHIFFLE...Box 39 P. O., Albany, N. Y.
Recording Sec...W. H. H. CLARK...Box 2839, Philadelphia, Pa.
Corres. Sec....F. L. POPE.....Box 6138 P. O., N. Y.

National Telegraphic Union.

THE Seventh Annual Convention of the National Telegraphic Union will be held at Portland, Maine, on Wednesday, September 15th, at ten o'clock A. M. It is important that every district should be represented at this meeting, as business of vital importance must necessarily be acted upon.

W. H. H. CLARK, W. H. YOUNG,
Rec. Sec'y. President.

THE NATIONAL TELEGRAPHIC UNION.

THE Seventh Annual Convention of the National Telegraphic Union will be held on Wednesday, September 15th, at Portland, Maine. It is hoped that every district will be represented. Portland was designated as the place of meeting for the present year, because of the exceptionally excellent condition of that district at the time the last Convention was held, and because the Annual Convention of the Union had never been held in New England.

In calling attention to the approaching Convention, we wish we could truthfully give a more cheering account of the present status of the Union. At the last Convention, in obedience to what seemed to be the demand of the members of the Union, radical changes were made in the constitution, with the hope that they would result in a revival of interest of the telegraphers in the association. Truth compels us to admit that these hopes have not been realized. Two or three new districts have been organized, but, with these exceptions, there is no evidence of renewed or revived interest in the organization. Entire apathy in regard to its maintenance seems to exist among the telegraphers of the country. This should not be so. The telegraphers should realize the importance of maintaining this organization. It is the only national organization of the telegraphic profession ever successfully inaugurated, and it should have been earnestly and systematically supported.

During the past year our worthy president, Mr. Wm. H. YOUNG, has labored earnestly and zealously in the Union cause; but the lack of support and coöperation has been most discouraging. One of the earliest Union men, he has adhered to its fortunes through good and evil report, and its decadence has been to him, as to others who believed its continuance important to the best interests of the profession, a source of the deepest regret.

It will be for the coming Convention to decide what action is proper and necessary under existing circumstances. For this reason we hope that every district will

be represented, that whatever action is taken may represent the desires and purposes of those who still adhere to the association.

Somewhat singularly, while the association has been neglected, and the telegraphers apparently become indifferent to it, its organ, THE TELEGRAPHER, has flourished, and received a more general support than ever before. For the first time in its history the volume just closed has been sustained without the necessity for calling upon the treasury of the Union for a dollar to defray its expenses. While the Union was flourishing its organ was published at a loss; when the Union is apparently moribund its organ has proved self sustaining. How shall we account for this anomalous state of affairs?

The future conduct of the paper will be one of the subjects to be considered by the approaching Convention. It is not probable that any material change will be made in its conduct; but, as the property of the Union, it is under its control, and, if the Convention should consider that in other hands it could be more satisfactorily and successfully conducted, its present publisher and editor would, not reluctantly, resign it to other and abler hands. If however, our course is approved, and the Convention believe that its interests and those of the profession can be best served by continuing the present management, we shall cheerfully assume the burden and labor necessarily attendant thereon for another year. In that event we shall hereafter, as previously, do our best to advance what we believe to be the best interests of the profession, and to the best of our ability maintain its character and standing as the recognized organ of the telegraphic profession on this continent. We desire, however, to have a full and unbiased expression of the opinion of our constituents at the Portland Convention in regard to the course of the paper since it was placed in our hands.

Many other matters of importance will come before the Convention, and it is to be hoped that some means may be devised to reawaken the interest of the profession in the Union as well as its organ, so that both may enter upon a season of prosperity and influence greater than they ever heretofore enjoyed.

The telegraphers of this country owe it to themselves to maintain the National Telegraphic Union. If further changes in its constitution are necessary, let them be made. Ours is a progressive organization, not wedded to any plan of operations, but ready to adopt such ideas and principles as may be found advisable. Let us meet and deliberate calmly and intelligently, and be prepared to act effectively for the future. The National Telegraphic Union should be maintained, and should number in its membership the great body of the practical telegraphers of the country. By united action the association may be brought up from its present weak and perilous condition and made powerful and effective. It is for our telegraphic brethren to decide whether this shall be done, or whether the Union shall continue to decline until it finally expires, leaving only a memory of what it once was and promised to be.

Meeting of the New York District.

THE attention of the members of the New York District of the National Telegraphic Union is called to the notice of an adjourned meeting of the District, at the Western Hotel, Cortlandt Street, on Tuesday evening, September 7th, at eight o'clock, P. M. A full and prompt attendance is requested, as the meeting is one of more than usual importance.

The representative of the Districts to the Annual Convention is to be elected, and other important business will be transacted. Members who are in arrears for dues are requested to make payment before the meeting, or to come prepared to do so, in order that the treasurer may settle the dues of the District with the treasurer of the Union before the Convention takes place, in order to entitle us to representation. Let us show to our brethren elsewhere that the New York District is yet a live

organization, and prepared to adhere to the Union so long as the Union exists.

Much time has heretofore been wasted by the failure of members to be on hand promptly at the hour at which the meeting is called. We hope that every member will make a special effort to be present at this meeting, and to be promptly on hand at the hour named.

The Russian-American Telegraph.

THE *Evening Post* of February 23, 1865, printed the first full account ever published in any newspaper of the projected inter-continental telegraph which was to bring Asia and America in communication. A few weeks before three vessels sailed from this port for Victoria, on the Pacific coast, carrying men and materials for an extended line of telegraph, which was to be erected through British and Russian—now, by the purchase of Alaska—American territory to Behring's Straits. From there the line was to cross by cable to the mouth of the Amoor river, thence to St. Petersburg, and by continental connections with that city, and connection with San Francisco on this side, we were to have telegraphic communication with every important point in Europe.

Several miles of this line were actually erected on the far northwestern American wilds, and hundreds of miles of wire were put up by the Russian government along the banks of the Amoor river, to meet the American cable which was to cross at the straits; but after two years this magnificent enterprise was abandoned in 1867; the success of the Atlantic cable killed it. In telegraphy the longest way round is not the nearest way home, and direct connection from the Atlantic to the British coast was better than to try to send despatches three fourths of the way round the world. "Swinging round the circle" had not then been reduced to a science.

The nominal capital of the Russian Extension Company was ten million dollars, and we believe thirty per cent. of this amount was called in. The present assets are mainly in a few hundred miles of poles and wire in Alaska. But will not the acquisition of Alaska utilize this property, and revive the Russian Extension Company? It seems a pity that so much enterprise and capital should have been expended in vain.—*N. Y. Evening Post*.

The money expended in the Russian Extension Telegraph is sunk beyond any chance of resurrection. When the work was suspended, we are credibly informed that the building parties had got the line constructed about as far as it could go on the route selected, and hundreds of miles of it would necessarily have been abandoned in any event. The Atlantic Cable was completed just in time to relieve the managers of that hopeless enterprise from a very unpleasant dilemma.

PERRY McD. COLLINS, with his usual disregard of possibilities of remuneration, so long as only other people's money is invested, is now in Europe, trying to get up some new Asiatic telegraph humbug, in connection with these abandoned lines, apparently oblivious of the fact, which recent private advices received by us confirm, that the poles and wire have practically disappeared, as was to be expected in a country where iron and wood are so scarce and valuable. We hope that the *Post* will not lend its aid to induce anybody to sink more money in such hopeless enterprises as the Russian Extension, or in any scheme of P. McD. COLLINS.

The Gold and Stock Telegraph.

FOR the last few months quite an active competition has existed between the Gold and Stock Telegraph Company and Mr. S. S. LAWS, in the business of furnishing telegraphically quotations of stocks and gold to the brokers, bankers and others in this city: the Gold and Stock Telegraph using the system invented by Mr. E. A. Calahan, and under his personal direction and supervision, and Mr. LAWS the instruments invented by himself, which have already been very fully described in THE TELEGRAPHER. In order to work this important and now indispensable branch of telegraph service more effectually and economically these two concerns have been consolidated, and the Gold and Stock Telegraph Company will hereafter conduct the business alone. This consolidation has, we understand, been made upon terms satisfactory to both parties.

Telegraph Operator Absconded.

JACOB R. BEAR, United States Express agent and telegraph operator at Brownsville, Nebraska, absconded on the night of the 27th August, with \$12,000 belonging to the Express Company. Bear is the same man who reported that he was shot and robbed of a considerable sum of express money at Brownsville last winter. The Express Company offer \$1,000 reward for the thief and \$1,000 for the money.

BORN.

FLIPPER.—June 30, at Brandon, Miss., a daughter to Mr. MAT. T. FLIPPER, of the Western Union New Orleans office.
SWIFT.—August 23, at Washington, D. C., to Mr. J. A. SWIFT, operator in the Western Union office, a son.

Notice.

An adjourned meeting of the New York District of the National Telegraphic Union will be held at the Western Hotel, Cortlandt street, on Tuesday evening, Sept, 7th, at 8 o'clock, P. M. A prompt attendance of the members is requested, as a delegate to the Annual Convention is to be elected and other important business will be transacted.

H. W. POPE,
Secretary.

ANOTHER LIBERAL PREMIUM OFFER!

GREAT INDUCEMENT TO WORK FOR THE TELEGRAPHERS' ORGAN.

THE LIST OF SUBSCRIBERS TO THE TELEGRAPHER Must be doubled within Three Months.

Our previous offers of Premiums to those who would interest themselves in increasing and extending the circulation of THE TELEGRAPHER

having proved so generally acceptable, and having met with so earnest a response, we have decided to present

A NEW LIST OF PREMIUMS,
even more liberal than those heretofore offered. From past experience, we think we are justified in anticipating, as a result of the following offer, that the subscription list of THE TELEGRAPHER will be

DOUBLED WITHIN THE NEXT THREE MONTHS.

The following Premiums will be open until October 31st, 1869. All Premiums will be forwarded, *PRE-PAID*, to their destination. For 25 subscribers, we will give to the person sending the names and money a first class No. 1 Box Relay, warranted.

For 15 subscribers, a No. 1 Telegraph Key, either Caton or Self-closing, as may be preferred.

For 10 subscribers, a No. 1 Pony Sounder.

For 6 subscribers, Pope's Modern Practice of the Electric Telegraph and Sabine's Electric Telegraph.

For 3 subscribers, Pope's Modern Practice of the Electric Telegraph.

IN ADDITION TO THE ABOVE PREMIUMS,

we will give to the person who shall send us, by or before October 31st, 1869, the largest number of subscribers, not less than FIFTY, one of

DURANT'S SELF-ADJUSTING RELAYS, OR

A CATON POCKET INSTRUMENT, AS MAY BE PREFERRED.

It is understood that subscriptions to be counted for Premiums must be of persons not now on our books; that is to say, renewals of subscriptions will not entitle to participate in Premiums.

Subscriptions must be for one year, or equivalent to that, and at the regular subscription price of the paper,

TWO DOLLARS PER YEAR.

Subscriptions for less than a year will be counted as fractional parts of one subscription.

Remittances may be made by Post Office Order or Registered Letter, at the risk of the paper,

CHESTER, PARTRICK & CO., TELEGRAPHIC AND ELECTRICAL ENGINEERS, CONTRACTORS, etc.,

38 South Fourth Street Philadelphia,

Manufacturers of, and dealers in every variety of
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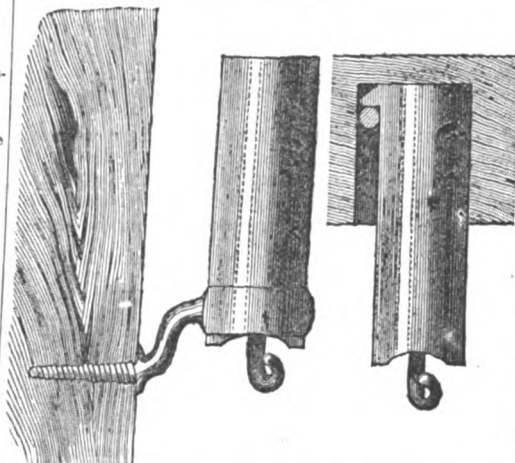
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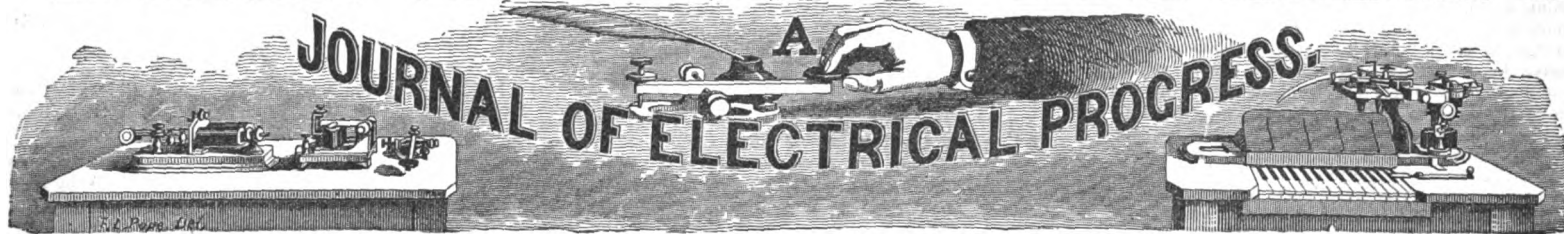
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THE TELEGRAPHER.



Vol. VI.—No. 3.

New York, Saturday, September 11, 1869.

Whole No. 165.

[From the London News.]

RAPID DEVELOPMENT OF SUBMARINE TELEGRAPHY.

VAST EXTENT OF CABLE LINES PROJECTED.

THE public is destined to hear much of submarine telegraphy during the next few months. The successful laying of deep sea lines for long distances being proved to be a mere question of capital, projects are on foot which, if carried out, will bring the whole world within the range of electrical communication, and that within a very short time. Messages to and from England and Bombay direct may be looked for in March or April of next year; while the spring of 1871 will probably see Australia and China connected with England by means of the Indian line. This last extension is one of the most important of all, for it not only provides for the places named, but embraces Ceylon, Cochín China, Java and Singapore. Starting from Bombay, the terminus of the British India line, it is to run from thence to Point de Galle, and on to Penang, Rangoon and Saigon; besides spanning the Indian Ocean to northern Australia, touching at Sumatra and Java by the way. In anticipation of some such enterprise, the Dutch have already laid land lines through Sumatra, and arrangements are completed for bringing the whole of their possessions into electric communication with Hong Kong. Again, Tasmania and the southwestern portions of Australia are to have lines of their own, after communication has been established with the northwestern division of that continent; and a recent glance at a map shows that every corner of this portion of the globe which is known to commerce is now included in one comprehensive scheme. Nor will there be any great difficulties to surmount. The Brisbane government is pushing lines to meet the cable at Cape York, and the financial authorities at the business centres of the different countries are giving it their strong support, while post office and other statistics prove the extent of, and necessity for communication between the different points, and between them all and India, Europe and America. The distance to be traversed is considerable—amounting to several thousands of miles of submarine cable, and some hundreds of miles of land lines; but this is split up into sections, as from Bombay to Point de Galle, 1,104 miles; from the latter to Penang, 1,416 miles; and from Singapore to Hong Kong, 1,696 miles. Throughout this line the soundings show the ocean bottom to be favorable to cable laying, and the only deep water sections will be between the extreme end of Java and Cape York, and between Penang and Point de Galle. The route described has been only selected after due consideration, and after another scheme for connecting the Australian colonies with Great Britain had been examined and rejected. This was by a combined land and sea system of telegraphs from the frontier station at Rangoon, down the Malayan peninsula to Singapore, and from thence through the Dutch possessions and by the Floris Sea to Cape York. The objections to this were valid, and will be readily understood. There was, first, the inconvenience of carrying important sections of the line through the dominion of a foreign power; and, secondly, the character of the Floris Sea bottom, which is studded with coral, and would be fatal to cables. A coral bottom is necessarily irregular, and it is found by experience that a cable laid on it hangs in bights from one mass of rock to the other, that the coral builds over it, and, if a fault is developed, prevents its being brought to the surface for repair. Coral seas are, moreover, full of live shells, which injure core when exposed, and the cables laid down for the Dutch government about Java have been already more or less damaged by their means. For these sufficient reasons it was resolved to run deep sea lines, which will be—humanly speaking—safe from injury, and the conditions

of making and laying by the Telegraph Construction Company, the expected traffic and probable tariff for communicating between London, and China, and Australia will probably be laid before the public before many days.

It is curious to mark how speedily one gigantic telegraphic enterprise of this kind begets another, and how closely the interests of the various lines are intertwined. The one described is of course supplemental to the British Indian Telegraph; and arising out of the latter is another cable, the work of which will be all important in facilitating communication with India. The Falmouth, Gibraltar and Malta Telegraph completes the submarine communication, so that a message may be hereafter sent from London to Bombay almost without a repeat. This has been done on the French Atlantic line from Brest to Duxbury, a distance of 3,600 miles, and at the rate of from four to five words a minute; and though, even when the Falmouth and the British Indian are both open, there will still be a short span of land lines through Egypt, it is already thought possible to organize submarine substitutes for these, and so to send and receive communications from India almost as quickly as a man can write. This would have been hopeless without the Falmouth line. The Anglo-Mediterranean Deep Sea Telegraph had already united Malta to Egypt; but before Indian messages had reached the former place they would have had to traverse 2,000 miles of wires through France and Italy, and would be thus liable to the interruptions and delays which are inseparable from telegraphing through foreign countries when repetitions have to be made. To obviate this, a cable will run first from Falmouth to Gibraltar, a distance of 1,431 nautical miles, and then from Gibraltar to Malta, a distance of 1,025 miles. Thus the Indian cable runs from Suez to Bombay, the Anglo-Mediterranean from Malta to Egypt and the Falmouth and Gibraltar from England to Malta. All three companies are distinct, but have entered into arrangements for mutual help and protection—arrangements which will be participated in by the cable to Australia. But these enterprises are thrown into the shade—so far as length of cable is concerned—by one which is now engaging the attention of a committee sitting in New York, which aims at laying a telegraphic line from San Francisco to Japan, a distance of 8,000 miles. We have, say our cousins, the longest railway in the world, and we mean to have the longest telegraphic cable as well; and so calculations have been made and estimates sent, and if the committee report favorably a prospectus will shortly appear.

Another important project which has been recently brought before the public aims at laying cables between Cuba and Porto Rico, and from Havana to Porto Rico, Mexico and Panama, as well as between the West Indies and South America generally; while the International Mid-channel Telegraph, to which Sir Samuel Canning and Captain Knapp Barrow have given much attention latterly, is at last in hand and will be working between Penzance and a telegraph ship stationed by the Admiralty between Sicily and Ushant, fifty-five miles distant, in a few months from this time. This last line will enable ships to have messages to and from every part of the world which has electric communication with England. As the government statistics show that 373,169 vessels entered and cleared with cargoes at ports in the United Kingdom in the year 1868, it is argued that the telegrams to and from underwriters, owners and consignees will be considerable, as well as the telegraphic traffic with distant ports.

Altogether submarine telegraphy seems destined to work many more of the changes which were scoffed at as visionary only three short years since. To talk with Hong Kong and Melbourne as easily as with Paris or York, to have America and Tasmania speaking to each other through the ocean, and to have ships announcing their arrival or asking for final instructions while miles

and miles away from shore, is all very wonderful. But the demand for telegraphic communication grows by what it feeds on. Those at the helm of the great companies already at work appear to lend their powerful aid to all enterprises having a fair promise of success, and up to a certain point, which is far from being reached yet, it seems certain that the more cables there are the better for those now laid. These last dovetail into each other, and promote their common interest in a very striking way. Indeed, co-operation is a leading feature in modern telegraphic enterprise, and, as we have shown, most of the schemes being developed now are associated ones, and so seem to have inferentially a guarantee of success.

Electricity.—Return to the Old Theory.

MR. EDWARD E. QUIMBY, of this city, has published in the *Evening Post* a very able defence of Dr. Franklin's theory of static electricity, which attributes this class of phenomena to an excess or a deficiency of a single highly attenuated fluid permeating all ponderable matter. Objections early made to this theory gave rise to the hypothesis of two subtle fluids, which was generally accepted by European electricians, but which involves objections quite as serious as those it was intended to obviate. Not many years since scientists ascribed certain classes of phenomena solely to the presence of different kinds of subtle matter, and at one period not less than six distinct "imponderable fluids" were required to account for light, heat, electricity, magnetism and gravitation. After the experiments of Fresnel had confirmed Huyghens' theory of light, Newton's corpuscular theory was no longer tenable: and now the received doctrine is that very different effects may be produced by the same kind of ethereal matter when in different states or degrees of motion. Light, heat, and actionism are supposed to be generated through one medium by transverse vibrations, varying only in velocity. It is not impossible that both magnetism and electricity may be manifested through the same medium; yet on this supposition we could not accept the idea of Matteucci, that the latter force is the result of vibratory action, although it appears most probable that dynamic electricity is propagated by pulsations which vary with the element of resistance. For the present we may regard Franklin's theory of static electricity quite as plausible as any other, bearing in mind only that he applied the term "electricity" to a subtle fluid, while we now use that word to denote the force manifested. We can only find room for the following extract from Mr. Quimby's interesting paper:

"The central idea of the Franklinian theory is, that a mutual attraction exists between electricity and all other matter; when matter is uniformly saturated with electricity, or, in other words, when the fluid is equally diffused, this attraction is balanced in all directions, and hence electricity is quiescent, producing no apparent effects. When this state—the equilibrium, as it is called—is disturbed, the balance of attraction is destroyed, and light bodies are set in motion in the direction of the greatest attraction. If they are deficient in electricity they move toward the nearest supply; if they contain an excess they are attracted in the direction of the greatest deficiency. Two contiguous negative bodies, while exerting no attraction for each other, are attracted by the electricity in surrounding matter, and, therefore, if they are sufficiently light, they recede from each other in obedience to the sum of the attractive forces to which they are respectively subjected. They may be made to move in the same direction by approaching the hand of some other substance, which, being a better conductor than the air surrounding them, and being connected with the earth, will more readily furnish the supply of electricity which they seek. Each of the two negative bodies constitutes and establishes, as it were, with respect

to the other, an electrical vacuum, and, as they both require a supply of electricity, they, of course, separate in opposite directions, unless we modify their situation by presenting a superior source of supply at some one point, when, as before remarked, they move toward that in obedience to what is obviously the greater attraction in that direction. Two light positive bodies separate because, being equally oversaturated, the excess of electricity which they severally contain carries them with it in its effort to impart itself to surrounding matter. The force which, operating in this way, causes electricity to tend to an equal distribution, might be called, if we were permitted to coin a term in familiar language, attraction of equilibrium. The attainment of a quiescent state, however, does not imply any cessation of this force, but merely uniform diffusion, and, therefore, perfectly equal attraction in all directions."

Condensing Magnetism.

M. JAMIN has communicated to the French Academy of Sciences a curious paper on a method of condensing magnetism similar to the condensation of electricity. He describes an apparatus made for him by M. Limet, which consists of a horse-shoe magnet composed of ten bars of homogeneous steel bolted together, the two sides being covered with insulated wire connected with 50 Bunsen's elements. When magnetised this magnet will bear a weight of 300 kilogrammes at the armature. When this armature is placed in contact with one only of the steel bars, the magnetism of the other nine is considerably diminished. Now, although the magnet was previously saturated with magnetism, it is possible to make it take more, and bear 600 kilogrammes. Another armature may be put on, so as to bear only on one of the component bars, and more magnetism can be condensed. M. Jamin has thus caused the magnet to carry 680 kilogrammes. This was done by applying five armatures; but as soon as they were detached the magnet returned to its primitive strength.

A Customer.

ONE cold night last winter Mr. Phillips, the "owl" at the Western Union office, was busily engaged in taking a long message and wishing for shutting-up time to come. The streets were still and deserted. The largest sized hour on the dial had been passed, and the heavy, monotonous tick of the office clock alternated with the sharp click of the lively instrument—the only sounds that broke the silence. Slowly the time went on. At last a shuffling, unsteady footstep was heard on the sidewalk, the door was pushed open hesitatingly, and a human head poked inside. After a moment's delay, as if for the purpose of surveying the premises, it was followed by a body and the legs belonging to it. Taken all together they went to make up an individual of about fifty summers. From a cursory glance one might easily have mistaken him for a near relative of the famous "bully boy with the glass eye," for not only one, but both his visual organs wore that shiny look peculiar to that condition which results from a too frequent indulgence in a bad quality of fire-water. His nose was of a fine strawberry color, and as he approached the desk with devious steps, the gaslight falling full upon it, it irresistibly reminded the operator of the headlight of an engine. Placing both hands—in one of which he held a piece of scrip—upon the edge of the counter, which reached nearly to his chin, and fixing his glassy orbs upon Phillips, he ejaculated:

"Whisky—glasher whisky."

"What?" said the operator, not understanding for a moment the request.

"Whisky—gimmo glasher whisky. Fill 'er up. Tend to your bishness and pash on 'er bottle. Heresher money," and he deposited the piece of scrip on the counter.

The operator saw through the mistake in a moment, but without deceiving him gravely assured him that they were not allowed to sell after that hour of the night. This explanation was not received with a very good grace by the thirsty applicant, who, nevertheless, could do no better than gather up his scrip again, and turn his face downward.

"Seems'er me you have thundrin' high counters here'n Providence. Why don't you cut'm down? Little cuss like you can't reach'er bottles. No whisky! Providence great place!" and he meandered out with a dignified stagger, while Phillips went back to his "press" reflecting on the many weaknesses to which humanity is heir.—*Providence Herald.*

In 1860 the first mile of telegraph line was put up in Minnesota. Now there are seven hundred miles, without taking into account the double and triple wires on any of the lines.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion.

No notice will be taken of anonymous communications.

The Fire Alarm Telegraph.

WASHINGTON, D. C., Sept. 6th.

TO THE EDITOR OF THE TELEGRAPHER.

ON the 31st ult. Mr. J. R. Dowell, superintendent of the southern division of the Western Union Telegraph Company, paid a visit to Washington, for the purpose of examining the apparatus and workings of the Fire Alarm Telegraph and all its details, with a view of extending the system in Richmond, Va.

Mr. Dowell had scarcely left the city when two more distinguished visitors arrived, in the persons of Colonel George T. Egbert, chief of police of Richmond, and Mr. James M. Tyler, his chief clerk.

These two gentlemen visited this city for the purpose of examining the Fire Alarm and Police Telegraph, with a view of establishing something similar in Richmond, Va.

Major Richards, chief of police of this city; Mr. M. Y. Holly, superintendent of the Police Telegraph; and Mr. J. H. Larcombe, superintendent of the Fire Alarm Telegraph, extended every facility in their power for a thorough inspection of the working of the telegraph system.

The visitors expressed themselves much pleased with the system of telegraph in use here, which is the American (Gamewell) system, and will return home zealous advocates for the introduction of the Fire Alarm and Police Telegraph in their city.

SPRING.

An Embarrassing Blunder.

JACKSONVILLE, OREGON, Aug. 26th.

TO THE EDITOR OF THE TELEGRAPHER.

AS "bulls" seem to be the order of the day, I contribute one from an Oregon "plug." A message was received here a short time since from a gentleman to his wife, informing her that he would be home the same evening, and directing her to prepare "a union birth." The operator here was in doubt, but the sender insisted, and he lost the sending office and delivered as above. The lady blushed and said she did not understand, and the notice to prepare was entirely too short. When repeated the message read, "prepare a warm bath," and the lady enjoyed the joke as much as anybody. X.

Why is It?

COLUMBUS, O., Sept. 2.

TO THE EDITOR OF THE TELEGRAPHER.

I HAVE a few inquiries to make, which I would like answered through the columns of THE TELEGRAPHER by any one who desires to do so. Why did the Western Union Company oppose and endeavor to prevent the French Atlantic Cable from being landed on the shores of the United States?

Why is it that the W. U. Company charge for from three to six words extra on messages received from other companies to be transmitted to points not reached by their (the other company's) lines?

Why is it that the public permit themselves to be charged double a just recompense for the transmission of messages?

Why is it that the opposition companies do not consolidate and form an opposition equal to if not greater than the monopoly?

I for one, and I have no doubt many others, would be glad to have one mighty opposition that would reduce the tariff to a reasonable standard. KEY.

TO CORRESPONDENTS.

H.—Subscription expires with No. 169.

NEW SUBSCRIBER.—We can furnish numbers of THE TELEGRAPHER from the commencement of volume six.

C. WESTBROOK and FULL.—Communications crowded out this week. Will appear next week.

No Telegraphic Concessions in China.

MR. J. ROSS BROWNE, late United States Minister to China, has informed the Department of State that no concession has been made by the Chinese government to any treaty power, company or individuals, granting any privilege for the construction of telegraph lines within the limits of the Chinese empire, and that, so far as he knows or believes, none is contemplated.

PERSONALS.

Mr. A. H. SEYMOUR has resigned his situation at No. 145 Broadway, New York W. U. office, and retires from the business.

Mr. Fox, of the Bankers and Brokers' office in this city, takes the situation in the Western Union office at 145 Broadway, vacated by Mr. SEYMOUR.

Mr. ED. SMITH, of the Western Union Chicago office, has gone to Omaha, Neb., office, in place of M. D. BENNETT, who has gone to San Francisco.

Mr. GEO. E. HINMAN has resigned from the Chicago Western Union office, and taken a position in the New York office of the same Company.

Mr. FRED. S. KENT has taken charge of the Cairo, Ill., office of the Western Union Company, in place of Mr. SMITH, who goes to Chicago.

Messrs. GUILLES and MANNERS have resigned their positions in the Western Union Chicago office, and Mr. MANNERS goes to Buffalo, N. Y.

Mr. J. J. POWERS, of the Chicago office, goes to Louisville, Ky.

Mr. JOHN Q. MASON has taken charge of the Union Stock Yard's office at Chicago, Ill.

Mr. W. S. STONEBACK has been appointed assistant night manager of Chicago, Ill., W. U. office.

Mr. F. E. ANGELL has resigned his position in the W. U. Chicago office, and gone to his home at Morrisville, Ohio.

Messrs. MORRISON, of Baltimore; BEECHER, of South Carolina; SMITH, of Louisville, and TOPPING, of North Carolina, have recently been appointed to the W. U. office, No. 145 Broadway, New York.

Messrs. S. E. WHEELER and J. E. McDONALD have resigned their positions at the Western Union office, No. 145 Broadway, New York. Mr. WHEELER goes to California, and Mr. McDONALD to New Orleans, La.

Mr. CHARLES H. LITHGOW has resigned his position in the Pittsburg, Pa., office, and goes to Chicago.

Capt. FULLWOOD relieved THOMAS D. WILLIAMS at "Sk" office, Pittsburg, Pa., and the latter returns to the main office and works the Chicago wires.

Mr. COGLEY and Mr. CHARLES H. McCONNELL, of the Pittsburg, Pa., office, who have been absent on a vacation, have returned to duty.

Mr. J. G. CONNOR, formerly of Pittsburg, Pa., has accepted a position in the Franklin Company's New York office, No. 11 Broad street.

Mr. E. W. WEDEN, formerly of the Franklin office, has taken a situation in the Bankers and Brokers' office.

Mr. J. B. WHITTLESEY, formerly telegraph operator at Canyonville, says the *Sentinel*, has been appointed Assistant Assessor of Internal Revenue for the district embracing Douglas, Coos, Curry, Jackson and Josephine counties.

Mr. W. N. WHITE has gone from Clarksville, Tenn., night office to Mason's Depot, acting as agent and operator.

Mr. J. B. SHELTON goes to Clarksville night office.

Mr. CHARLES MOUNT, of Clarksville freight office, quits railroading, and has gone to Terre Haute city office.

Mr. GEORGE A. WEBSTER, formerly operator on the U. P. R. R. at Medicine Bow, W. T., has taken the situation of agent and operator at Lookout, W. T., Station, on that road.

Mr. A. H. KANODE is in the Western Union office at Washington, D. C., not Baltimore, Md., and Mr. M. L. HELLINGS is operator at the Washington Depot office of the B. & O. R. R., at Washington, D. C., not Baltimore, Md., as erroneously stated in last week's TELEGRAPHER.

Mr. A. T. CHILDS, operator in the Western Union office, Washington, D. C., who has been absent for several weeks, returned to duty on Monday last.

Mr. JOE JEFFREYS has been transferred from Granite Canon, U. P. R. R., to Hazard, as agent and operator.

Mr. D. W. SPRINGER, formerly night operator at Granite Canon, is now agent and operator at that station, and the night office closed.

Mr. TUPPER, agent at Sherman, U. P. R. R., has been removed, and Mr. WM. MORTIMER, from Pennsylvania, appointed agent and operator.

Mr. WM. PHILLIPS, formerly day operator at Sherman, has been transferred to the night office at that station.

Mr. KELSEY, of Laramie office, U. P. R. R., is east on a leave of absence.

Mr. S. R. LENTZ, agent and operator at Lookout, U. P. R. R., has gone east on a furlough—he says to get a life partner. We wish him success in his laudable purpose.

Mr. G. M. LANE is transferred from Benton; U. P. R. R., to Lookout, as agent and operator during the absence of Mr. LENTZ.

Mr. JACK ALLEN, well known among the older members of the fraternity of Detroit, Mich., is night operator at Como, U. P. R. R.

Mr. MARKLEY, night operator at Carbon, has resigned and gone home.

Mr. TOWNSEND now occupies the place made vacant by Mr. MARKLEY.

Miss ABBIE HAWES, of Housatonic, has been relieving Miss LUCY FREEMAN, of Great Barrington, Mass., for a short time.

Miss COLSON, of Pittsfield, has just returned from her vacation. She was relieved by Miss KITTIE CANNON formerly of State Line.

GEORGE REYNOLDS has left the W. U. Springfield office, and gone to Montreal.

FRED. WHEATON, of Bridgeport, Conn., is still attending to his telegraphic duties, and winning hosts of friends as he deserves.

THE TELEGRAPH.

Monthly Statement of the Western Union Telegraph Company.

	July, 1869.	July, 1868
Total Receipts.....	\$593,670 01	\$601,730 61
Total Expenses.....	412,895 02	396,163 66
Net Profits.....	\$180,774 99	\$205,566 95

(By Atlantic Cable.)

French Cable Items—Armored vs. Light Cables.

LONDON, Sept. 7th, 1869.

SIR JAMES ANDERSON has withdrawn from his connection with the French Cable Company.

The following appeared in the money article of the Times of Friday morning:

"It is understood that the traffic of the French Atlantic cable during the first week it was opened produced a net sum for the company of £577, and during the second week £746, and the number of messages was 277 and 321 respectively. The submarine and subterranean cables at Brest were joined up on Saturday last, and the whole line is now certified to be in excellent working order."

The leading article in the Times of Monday on the boat race was telegraphed at full length by the French cable, and appeared next morning in New York. The annexed note addressed to the new India, Australia and China Telegraph Company by Sir William Thomson notifies, apparently, another step towards insuring the prospect of successful submergence:

"LARGS (by Greenock), Aug. 30, 1869.

"DEAR SIR—A plan for electric testing at sea has recently occurred to me as available with Mr. Varley's form of cable, which will give a security against faults not attainable with any form of cable having metal in its outer covering. According to this plan a fault existing in the coiled part of the cable on board ship and merely producing an addition to the general leakage, scarcely recognizable as due to an incipient fault, will make a sudden and decisive movement after it passes out of the tank and before it reaches the stern pulley. The alarm will thus be given at the right time to stop the egress of the cable, and cut out the fault with a minimum of risk and delay. The great advantage of this in respect to the complete success of a cable-laying expedition is amply illustrated by the history of the Atlantic expeditions of 1865, 1866 and 1869.

"I hope to give you full details of my plan, with experimental proofs of correctness, in good time to allow it to be used in your undertaking. I remain yours, faithfully,

WILLIAM THOMSON.

"James Ford, Esq., Secretary India, Australia and China telegraphs."

The disposition of the public to pay attention to telegraphic enterprises is attended by the usual result of a multiplicity of projects being hurried out; but the events of 1866 are not yet sufficiently remote to admit of the prospect of danger. The French Atlantic cable being only a few weeks old, a new one from Ireland to Nova Scotia, of a lighter description, to cost £450,000, is now talked of, which is to do the work of the existing cables at half price. If the capital could be found and the line successfully laid, the shareholders would probably be informed within a month that a new one, of still lighter construction, would be proposed, which, at a further reduction of fifty per cent. in the tariff, would still be expected to prove highly remunerative. That the progress of electrical science will ultimately cause

the cables of the present day to appear cumbrous can hardly be doubted, but much further experience will be necessary before any very costly experiments in that direction can be ventured upon. It is affirmed on good authority that during the last eighteen years there have been eight thousand miles of light cable laid, some covered with light wire, two consisting of India rubber cone alone, and others protected with hemp and other substances, but that no line of this description has been found to last longer than one year, while in some cases the period has been a few weeks only. All the cables now in working order are of the strong and heavy form, and there seems no example of any kind that can be cited to justify the adoption of the light principle.

The Germano-American Telegraph Line.

The French Atlantic telegraph cable is scarcely landed upon our shores before we have statements in detail of another projected line. The Teutons of the Old World are not disposed to lag far behind their neighbors, the English and French, in the matter of transatlantic communication with the New. Though not, in general, as easily aroused as are the English and French in regard to matters of a cosmopolitan character in the which the question of self-interest is especially concerned, not so quick to catch at and give a practical realization to new ideas, they are, nevertheless, when once thoroughly awake to the ruling, progressive sentiment of the times—active, persevering, determined. We have, therefore, the best of grounds for believing that before another two years—the time stipulated in the concession for the completion of the cable—shall have passed by, a third line of telegraph communication will connect us all the more closely with the people of the Old World. Thus will another link be forged for the chain that is to bind the nations of the earth in universal brotherhood. The Eastern terminus of this new cable is to be some suitable point of the North German coast on the North Sea; the Western, some point between the cities of Boston and New York. The cable is to be constructed in the very best manner possible, and is to be commenced within six months after the granting of the concession. Let them come. The New cannot have too many points of mental contact with the Old.—*Engineering and Mining Journal.*

Telegraph Enterprise.

Another great European telegraph project is on foot. A company just formed in London has purchased with concessional rights, the following cables, namely: 1st, Denmark to England, from Sondervig to Newbiggin, actual distance 334 miles; 2d, Denmark to Norway, from Hirtshals to Arendal, actual distance, 60 miles; 3d, Denmark to Russia, from Moen to Bornholm, and Bornholm to Libau, actual distance, 304 miles; 4th, Norway to Scotland, from Egersund to Peterhead, actual distance, 270 miles; 5th, Sweden to Russia, from Grislehamn to Nystad, actual distance, 96 miles. Of these, the three first are already laid, and have been for some time working; the fourth is shipped on board ready for laying, and the arrangements for the fifth are in course of completion, and both the latter are to be laid at the risk and cost of the old companies. The new company undertakes the working, and will be entitled to the receipts from the 1st of June. The cost of purchase was \$2,500,000. The ultimate intention of the company is a connection with North America via the Russian dominions.

Ocean Telegraphy.

The successful laying of the French Atlantic Cable has banished the last doubt as to the practicability of successfully laying and working cables of any desired length. The first attempt at laying a cable across the bed of the Atlantic failed. This failure has been followed by two remarkable successes, and ocean cables are henceforth to be the means by which a large portion of all the communication will pass to and fro between the hemispheres. So long as only one cable had been laid and worked, there remained the doubt that this success was exceptional, that it might be followed by a series of failures, which would demonstrate a great risk in investing money in such enterprises. But the recovery and putting in order the first cable—for a time almost believed to be a total failure—and the now perfect and profitable working of these cables between Europe and America, have doubtless convinced capitalists of the safety of this class of investments, and the raising of funds for further enterprises of this kind will be an easy matter.—*Scientific American.*

The Fire Alarm Telegraph recently constructed by Gamewell & Co., for Cambridge, Mass., went into operation on Friday of last week.

The Telegraphs.

It is rumored, and we believe with truth, that when Government has taken over the administration of the telegraphs, the repairs, maintenance and construction of telegraph lines will not be intrusted to any commercial company. The Government, it is said, will employ for this purpose non-commissioned officers and men of the Royal Engineers. Thus, not only will the work be more cheaply performed than by civilian labor, but a valuable corps of constructors of telegraphs be formed, which will be of the utmost service in any future campaign, to lay and maintain those field telegraphs which must in future be essential concomitants of every combatant force in active service.—*London Globes.*

Another Anglo-French Telegraph Cable.

The French Government having expressed their willingness to allow the Submarine Telegraph Company to establish a communication between Brest and England, and employ it exclusively for the transmission of messages to and from America, arrangements are being made between the Submarine Company and the French Atlantic Company for the immediate construction of the proposed line.—(*London*) *Engineering.*

TELEGRAPHIC BREVITIES.

THE *Providence Journal* states that the landing of the French Atlantic Cable was celebrated at Rocky Point, R. I., on Friday, Sept. 3d, by the gentlemen of the Boston city government, Governor Padelford, Mayor Clarke, of Providence, and a few other officials of Rhode Island assisting.

A telegraph wire has been put up between Newport and Dexter, Maine.

The prospectus has been issued in London of the India, Australia and China Submarine Telegraph under favorable auspices, the list of directors including Mr. W. F. Cooke, of the Electric and International Telegraph. The arrangements seem to be satisfactory, and the route is for the purpose of connecting the telegraph system of British India at Point de Galle, in the island of Ceylon, with the Straits Settlements, Australia and China.

It is stated that the arrangements between the French Cable Company and the Telegraph Construction Company, in relation to the fault which is supposed to exist in the line, is that the Construction Company, who were entitled to receive £90,000 in fully paid shares thirty days after the landing at St. Pierre, and a further £20,000 six months after the landing at Duxbury, shall leave £20,000 in the hands of the French Company for two years, and guarantee to pick up and repair the fault, if necessary, during that period.

The Franklin Telegraph Company is about completing its fourth wire between New York and Hartford, Conn.

Another Superintendent Resigned.

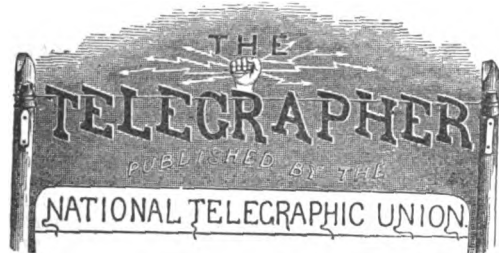
MR. T. B. A. DAVID, Superintendent of the Fourth District, Central Division of the Western Union lines, headquarters at Pittsburg, Pa., has resigned to engage in other business. Mr. C. O. ROWE is his successor. On the occasion of his retirement Mr. David was presented with a magnificent watch and chain by the employees of his District. The presentation was made by Mr. Fleming, and was the occasion of an expression of the regret which those so long associated with him felt at the separation, and of their best wishes for his future welfare, happiness and prosperity.

Mr. David appropriately responded in a very neat little speech, in which he alluded to the faithfulness with which the employees in his District had seconded his efforts to advance the interests of the Western Union Company, and expressing his heartfelt appreciation of this last demonstration of friendship and esteem on the part of his former friends and associates.

The American Institute Fair.

THE annual exhibition of the American Institute is held this year in the Empire City Skating Rink building, at the corner of Sixty-third street and Third avenue, in this city. The main building is 350 feet in length by 170 feet in width. A new building is going up at the easterly end of the rink, which will be 200 feet long by 50 feet wide; the main building is now open for the reception of goods.

The articles on exhibition will be classified into seven departments, and Electric Telegraph inventions and instruments will be placed in the sixth department, which is entitled the Department of Inter-communication. Each of the departments is to be divided into seven groups. Articles of like character will be kept together.



SATURDAY, SEPTEMBER 11, 1869

J. N. ASHLEY,.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.
 Vice-President..W. P. MERRILL..W. U. Tel. O., Portland, Me.
 Treasurer.....A. L. WHIPPLE..Box 39 P. O., Albany, N. Y.
 Recording Sec..W. H. H. CLARK..Box 2839, Philadelphia, Pa.
 Corres. Sec....F. L. POPE.....Box 6010 P. O., N. Y.

Annual Convention N. T. U.

By and with the advice and consent of the Executive Committee and a majority of the Delegates, the meeting of the Seventh Annual Convention of the National Telegraphic Union is hereby postponed.

The Convention will assemble at the Western Hotel, Cortlandt street, New York, on Thursday, September 23d, at ten o'clock, A. M.

W. H. H. CLARK,
Rec. Sec'y.

Wm. H. YOUNG,
President.

REMOVAL.

On Monday next the office of THE TELEGRAPHER will be removed to Nos. 78 and 80 Broadway, room 48.

The present location of the office is in many respects inconvenient, and unsuitable, and difficult to be found, and we have for sometime regarded a change as advisable.

In our new location—which is easy of access and central—the increasing business of the paper will be better accommodated, and we are confident the change will prove advantageous and desirable.

As soon as we are settled in our new quarters we shall be happy to receive our telegraphic friends—not only of the city but from abroad—when they shall have occasion to visit New York.

THE FUTURE OF THE TELEGRAPH.

THE article reprinted on our first page from the *London News*, giving an account of the submarine telegraph lines now in process of construction and projected, shows the wonderful activity which exists in extending telegraphic communication throughout the world. Nothing more remarkable has characterized the present century than this bringing of the nations of the earth into intimate and rapid communication by means of the telegraph. The newspapers of to-day, by means of the telegraph, are enabled to present daily an epitome of what is transpiring in the most important countries and localities of the old and new world. By the establishment of the telegraph, the character of the press itself has been completely revolutionized, and its sphere enlarged to an extent which a quarter of a century ago would, if predicted, have been regarded as impossible, and the person who should have hazarded such predictions would have been regarded as a crack-brained enthusiast.

There seems to be practically no limit to the possibilities of progress of the telegraph, and it is impossible now

to predict the changes and advancement which another quarter of a century may witness. What has been accomplished is apparently but the forerunner of what will be, and the youth of to-day may live to see the present apparently fast age characterized as slow and old-fogyish. Steam and electricity are rapidly revolutionizing the world, and their present triumphs over time and space are but the precursors of what may be witnessed in the future. Steam itself may perhaps be superseded by some cheaper and more powerful agent, but nothing can ever supersede electricity as a means of rapid communication.

The great desideratum in telegraphic science is unquestionably the development of an improvement in telegraphic machinery, which shall largely increase the capacity of telegraph lines for the transmission of business, and, as a consequence, simplify and cheapen the use of the telegraph to its customers. That such a system will be developed we have the fullest confidence. Many scientific minds are engaged in attempts to solve the problem, and that it will be solved is to us as sure as anything can be which has not already been demonstrated. Even with the instruments now in use the speed and certainty of telegraphic communication may be greatly increased. What is needed is a better class of lines, constructed for the purpose of affording as nearly perfect conditions as possible rather than for the emolument of contractors; a more scientific arrangement and adaptation of batteries to the work to be accomplished, and a more thorough training of the experts by whom the practical operations of the telegraph are conducted. The lines heretofore constructed have been faulty and defective to a degree which should have been regarded as disgraceful at any time during the last ten years. Very little practical ability or judgment has been displayed in the construction of lines, and those built within the last five years have been but slight improvements on those first established. Small iron wire is still generally used for a conductor, and as many points of contact and escape of the electric current as practicable are supplied; and on a large portion of the lines insulators are used, excellent in dry weather, or when, through the action of frost, a natural insulation is furnished, but as nearly worthless at other times as possible consistent with the working of the wires at all. The great curse of telegraphing, in this country at least, has been the attempt to build cheap lines. Many of them, it is true, have cost the stockholders enough to pay for really good lines, but a large percentage of it has gone into the pockets of contractors and officials interested with them in realizing as large a profit as could be made from construction.

The invention of the American compound wire, which with the strength and permanence of steel combines the superior conductivity of copper, and a reduction of weight which obviates the necessity of a multiplicity of supports, and the Brooks improved paraffine insulator afford means of securing improved conductivity and insulation, which should be generally adopted, and the character of the lines correspondingly improved.

When this is done, the cables projected completed, and a rapid system of communication developed, the possibilities of the telegraph will begin to be realized and appreciated. We hope that the columns of THE TELEGRAPHER may record within a reasonable time the accomplishment of these desirable reforms and improvements, and the consequent development of the capabilities of the Electric Telegraph.

The Western Union Co. and Government Telegraph.

WE reprinted, recently, a paragraph from the *Public Ledger*, of Philadelphia, in which it was stated that "it was pretty well understood" that the W. Union Co. would press upon Congress, at its next session, the purchase of its lines and the transfer of the business to the Postoffice Department. In justice to the managers of that company we copy from its official organ the following extract

from a private letter written by the President of the Company to the proprietor of the *Ledger*:

"If the action of this Company has been pronounced in any respect during the past two years, it has been especially so in its open and vigorous opposition to any interference whatever by our government in the telegraph business. We have not only not endeavored or desired to sell our lines to the Government, but we have opposed all legislation to that end. What our course may be in the future may be inferred from the past, and this allegation of the *Ledger* is utterly groundless."

The Convention Postponed.

AS WILL be seen by the notice published in this paper, the Annual Convention of the National Telegraphic Union has been postponed until the 23d inst., and the place of meeting has been changed to the Western Hotel, Cortlandt street, in this city. This change has been made at the nearly unanimous desire of all concerned, and in the manner authorized by the constitution. There seemed but little probability of the attendance of delegates at so distant a point as Portland, Maine, and for other reasons it was considered advisable that it should be held in this city. The postponement will afford time to such Districts as have not already elected delegates to do so, and we hope to see a full representation here on the 23d inst.

The New Telegraph Invention.—A Call upon Congress.

THE new invention of an automatic system of telegraphing, to which we have referred several times, is of such vast importance to the public, the press and government, if practicable, that Congress should at once on reassembling make an appropriation to test its merits. As we understand it, there seems to be no doubt that this invention is most valuable, and calculated to create a revolution in telegraphing, as well as in the social intercourse and business transactions of the world. The facilities of communication will be increased eight-fold or more with little additional labor or cost, and consequently the rate of charges for telegraphing must be very much reduced. To the government itself it will be worth millions, but to the general public its value will be incalculable. What does a hundred thousand or two hundred thousand dollars amount to, if that sum be needed to make the experiment, in comparison with the results? Did this or any other government ever spend thirty thousand dollars so profitably as when that sum was appropriated by Congress, in 1843, to try the first telegraph line between Washington and Baltimore? The vast improvement in telegraphing, which in all probability will be the result of this new automatic invention, is scarcely less important than the original discovery. Let the necessary sum be promptly and freely appropriated, then, to test the invention, and let the government prepare to take and use it for the public good, and not permit it to be held by the existing or any future monopoly.—*N. Y. Herald.*

We hope that no application will be made to Congress for an appropriation for any such purpose, or that if it should be, that it will be rejected at once. We do not say this out of any hostility to the improvement referred to. On the contrary, the columns of THE TELEGRAPHER during the last two years prove that we have advocated just such an automatic system, whereby the capacity of the lines for the transmission of business should be largely increased. But if this invention actually accomplishes the purpose, there need be no difficulty in demonstrating the fact without an appropriation by Congress. It would be just as appropriate to ask Congress to vote money to test improvements in the manufacture of paper or in the steam engine as in the telegraph system.

This idea, which has become so general of late years that the government must control and pay for everything new and useful, or supposed to be so, should at once be dissipated by the refusal of Congress to bleed the Treasury further for such purposes. However honest the inventors, themselves may be they are used by other parties to victimize the taxpayers. If, for instance, Congress should appropriate the \$200,000 asked for to test this invention, what proportion of that amount does the *Herald* suppose would ever reach the inventor, or be legitimately expended

in testing the value of his invention? Not one fourth of it would be thus expended. And even if the appropriation were honestly used, we contend that it is foreign to the true functions of the government to be thus expending the people's money on improvements of established systems.

Men of means are interested in this improvement, and there is no doubt but that it will be fully tested whether the Treasury be bled or not. If it accomplishes the desired object it will prove a valuable property to its proprietors; if it does not the people should not be taxed for the experiments.

Election of Delegates.

At an adjourned meeting of the New York District of the National Telegraphic Union, held at the Western Hotel, Tuesday evening, September 7th, Mr. Walter O. Lewis was unanimously elected delegate to the annual convention, and Mr. W. W. Berhans alternate.

Telegraph Communication Suspended.

On Wednesday last a heavy rain storm, accompanied by a violent gale, prevailed in the East, which did much damage. In the afternoon every wire between this city and Boston was prostrated, and telegraphic communication east of Worcester, Mass., was interrupted from about five o'clock P. M. until Thursday morning. Telegraphic communication with Boston has not been suspended for so long a time for more than a year before, as the wires connecting the two cities are numerous and occupy several different routes.

Mr. Little's Inventions.

GEORGE LITTLE, of Rutherford Park, New Jersey, is taking out patents in Europe for improvements in apparatus for composing, transmitting and receiving telegraphic communications.

Why Not?

The project of another cable has been started on the other side of the Atlantic, but we do not hear that any Americans are connected with it. If cable laying is to become so fashionable, why shouldn't we take a hand in? All the steamer lines from this port are owned by foreigners; most of the carrying and passenger traffic is done by them, and now it would seem as if they were about to enjoy a monopoly of ocean telegraphing. Is our enterprise dead, or what's the matter?—*N. Y. Commercial Advertiser.*

New Patents.

For the week ending Sept. 7th, 1869, and each bearing that date.

No. 94,545.—APPARATUS FOR LIGHTING GAS BY ELECTRICITY. William W. Batouider, Boston, Mass.

I claim the combination of the friction electrical generator, current devices M O, and insulators E N, substantially as described, with the lever I, the gas burner H, gas cock X, and conduct K, as set forth. Also, the combination of a flexible gas-conduct, or hose, L, with the gas burner H, gas cock friction electrical machinery, or generator, and broken circuit, as explained. Also, the combination of the gas-cock, gas burner H, and conduct L, and broken electrical circuit, with the electrical exciter or bell c, so as to be movable with it from and to the vulcanite frustum A, or its equivalent, when the latter is stationary in position.

No. 94,556.—SELF-CLOSING TELEGRAPH KEY. W. Clay Bowers—Wheatland, Iowa.

I claim, 1. Revolving knob D, with pin d and lug e, in combination with the connecting rod F, spiral spring G, and auxiliary lever E, with platinum nipple p, to operate substantially as described, and for the purposes set forth.

2. Platinum nipple a' on the side of anvil, substantially as and for the purpose set forth.

3. Sliding button I, to operate substantially as described, and for the purpose set forth.

Recent British Patents.

No. 2,281.—IMPROVEMENTS IN ELECTRO-TELEGRAPHIC APPARATUS. Wm. Alexander Lyttle, Grove, Hammersmith. Six months provisional protection.

No. 2,297.—IMPROVEMENTS IN APPARATUS FOR SIGNALLING TRAINS ON RAILWAYS. Charles Ernesto Spagnoleto, Telegraph Department Great Western Railway, Paddington.

MARRIED.

DONOVAN—FISK.—At Worcester, Mass., July 4th, Wm. F. DONOVAN, of the Franklin Co.'s Palmer, Mass., office, to HATTIE F. daughter of J. D. FISK, Esq., of Brookfield, Mass.

SHERMAN—SWETT.—At South Orrington, Maine, September 1st, by Rev. ARMIT PRINCE, Mr. THOMAS H. SHERMAN, of Bucksport, Maine, to Miss KATE E. SWETT, of South Orrington, Maine.

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Great improvement in the working of Lines in any condition of weather, this resulting directly from superior conductivity and insulation.

The above claims have been fully and fairly demonstrated, and that relating to sleet more especially, during the past winter.

Numerous and severe sleet storms, in sections where the Compound Wire is in use, have proved beyond question its great superiority.

One of the most severe of these storms (of the effects of which a very satisfactory report has been received by the company), occurred about the middle of December, in the Sierra Nevada mountains, and during which a No. 9 iron wire, on the lines of the ATLANTIC AND PACIFIC STATES TELEGRAPH COMPANY, was broken eighteen times within the space of one mile, while a COMPOUND WIRE by its side remained uninjured.

Other testimonials of like character have been received, all of which are conclusive that the merits of the COMPOUND WIRE have not been over-estimated.

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Whenever a death occurs among those insured, an assessment one dollar and ten cents will be levied upon all. This dollar goes to the widow, orphans, or heirs of the next insured party deceased, and the ten cents to be applied to the payment of current and necessary expenditures.

Applications must be made to the Actuary, in writing, accompanied by a certificate, signed by not less than two persons in the Telegraphic business, of good character, that they know the applicant is fully qualified under the preceding rules.

A small annual assessment, not to exceed one dollar, may be necessary to cover working expenses after the first year.

This plan of insurance will be conducted under the supervision of the Executive Committee of the N. T. U., and it will be their aim to make it as inexpensive as reliability and security will allow. It is unnecessary to make any extended remarks, or any comparisons of the great advantages this plan affords for the payment of ready money, at the event of death, over Life Insurance Companies.

Parties wishing to insure should write out the following questions with their answers thereto:

What is your name?

What is your age?

Where is your residence?

What is your occupation?

Have you any constitutional disease or debility?

Sign the above statement, and forward it to the Actuary, with a certificate signed by two persons connected with the Telegraphic business, that the applicant is well known to them, and that the answers given by him to the above questions are correct?

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Gen. ANSON STAGER, General Superintendent of the Central Division of the Western Union Lines writes:

"I feel assured that it will prove of great value to all interested in the science or practical details of the Electric Telegraph, and supply a deficiency that has long existed. A familiarity with its pages will, I have no doubt, render your work standard authority among practical telegraphers in this country on all matters concerning the Electric Telegraph of the present day."

Many other highly complimentary letters have been received from Mr. J. VAN HORNE, General Superintendent of the Southern Division, W. U. Co., and others, which want of space prevents publishing.

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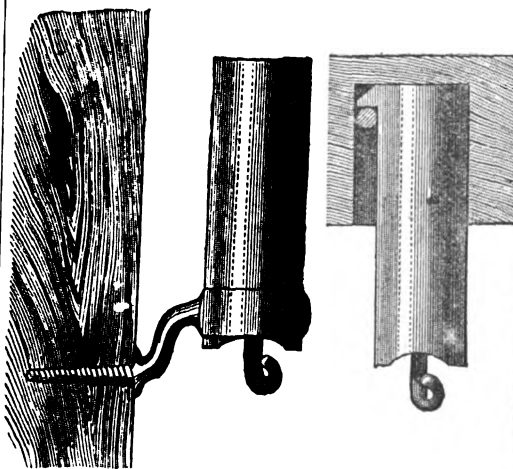
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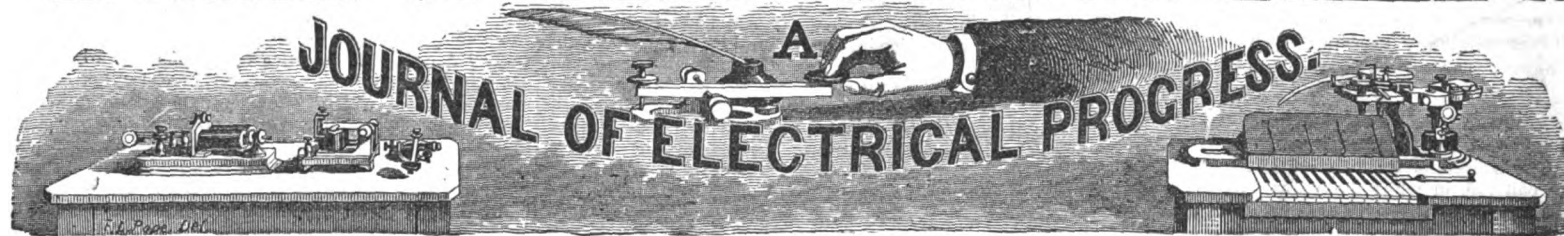
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J. N. ASHLEY,
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(P. O. Box 6010.)

THE TELEGRAPHER.



Vol. VI.—No. 4.

New York, Saturday, September 18, 1869.

Whole No. 166.

[FOR THE TELEGRAPHER.]

A CARPET BAGGIST IN THE NORTHWEST.

By F. L. P.

WHEN I announced my intention, a few weeks since, of leaving for the season the dusty streets and red hot pavements of the metropolis, and seeking some far off, and secluded spot where nothing could remind me of the busy whirl and clatter amid which our lives are passed, one of the "fraternity" volunteered the opinion that "there wasn't any such place within the territorial jurisdiction of the United States." Says he, "If you leave civilization behind you, and push out into the pine forests of the North, the cane brakes of the South, or the desert plains and sage brush of the far West, wherever two cabins are gathered together, the first thing to meet your eye shall be a small square sign, bearing in white letters upon a blue ground the legend, 'WESTERN UNION TELEGRAPH OFFICE!'"

It cost me some time, and a great deal of travel to disprove this young fellow's assertion, but I did it.

Stowed comfortably away in an Erie palace car, I journeyed westward through the wild yet beautiful scenery, and the prosperous cities and villages of the "Southern tier," and the almost primeval wilderness of Northwestern Pennsylvania, and in due season was landed in Cleveland, amid a chaos of smoking locomotives and oil refineries situated in a basin south of the city—the general effect being very suggestive of the valley of Tophet. Leaving this particular locality out of consideration, few, if any, places can rival the "Forest City" in the beauty of its streets and private residences. Western people, however, consider it rather a slow place, and say that the highest earthly ambition of a Cleveland man is to be a stockholder in the Western Union, a director in some railroad and in a Lake Superior mine, and to own a mansion in Euclid avenue. "Earth holds no fairer gifts than these."

From Cleveland I took passage on the steamer "Meteor," bound on an excursion trip through the lakes.

Reaching Detroit after one night's run, I employed a few hours very pleasantly in exploring the city, under the escort of Mr. PRIEST, of the Western Union office; to whom, as well as to Mr. FOX, the manager, I am under many obligations for their kindness and courtesy. Steaming northward through the straits we touched at Port Huron, where we were confronted by the inevitable "blue sign" attached to a tumble-down edifice on the wharf. Then we pushed out into the broad expanse of Lake Huron, and by afternoon were out of sight of land, and tossing about in a pretty lively sea, to the manifest discomfort of a majority of the excursionists. Coiled up on a sofa, with rueful countenance, might here and there be descried some girl of the period, who, but an hour ago, gaily pervaded the upper deck or the captain's look-out, with field glass in hand, and blonde tresses floating in the freshening breeze.

The following day was occupied in passing up St. Mary's river, and through the magnificent ship canal at the rapids. At night-fall we left behind us the wilderness bordered shores of the river, which gradually expanded into the vast inland sea known as Lake Superior.

The next morning we reached Marquette, a lively looking town, picturesquely scattered over a steep hill and pleasantly shaded with pine trees, which have been preserved from the original forest. I went ashore here—bidding farewell to the "Meteor" and her gentlemanly and obliging officers, who spared no pains to render the trip up the lake a most delightful one to everybody concerned—and employed a few days pleasantly and profitably in visiting the numerous objects of interest in that vicinity. My stay in this vicinity was rendered the more agreeable through the kind attentions of the telegraphic

fraternity at Marquette and Negaunee, especially Messrs. DALLIBA, WADSWORTH and MINICK; and I shall always remember with pleasure the various sight-seeing excursions in which we participated during my necessarily brief stay in the neighborhood. The upper peninsula of Michigan forms a community by itself, being almost entirely cut off from communication with the outer world during the winter months; although, from my own experience in northern regions I suspect that this is by no means the least pleasant portion of the year.

The upper peninsula is pretty well supplied with telegraphic facilities by the Northwestern Company's lines, which reach every point of importance. The character of the country renders it a somewhat arduous task to keep the wires in order, especially those running "across country" through the wilderness. The company are fortunate in commanding the services of such a repairer as the one I met at Negaunee, a specimen of "Gaelic grit," whose determination to "go through" rises in exact proportion to the difficulties and obstructions which oppose him. When I saw him he had just arrived from an amphibious tramp of fifty miles or so through a submerged wilderness, between Negaunee and L'Ance—an experience which appears to afford him great delight, especially when diversified by a few fights with Frenchmen along the route, for whom he cherished a deep-rooted antipathy. While sojourning in this region I had the pleasure of meeting Mr. G. H. BLISS, Superintendent, and Mr. S. R. FRENCH, operator, from the Northwestern Railway office in Chicago, who, like myself, were enjoying a vacation in the pure air and delightful climate of the peninsula.

A trip of two nights and one day from Marquette landed me in Chicago, where I found enough of interest, telegraphically and otherwise, to detain me several days. In fact telegraphic matters in Chicago, just at present, are decidedly stirring. The removal of the headquarters of the Central Division of the W. U. Co. from Cleveland to this city has infused new life into every department. Gen. STAGER seems to have set out with the praiseworthy determination of having the lines under his charge brought up to the front rank in point of efficiency and durability. The work has been commenced by rebuilding, entire, all the lines in the city of Chicago; a work which has occupied considerable time, but is now nearly completed. Each line of poles is arranged to accommodate forty wires, which are carried upon eight cross arms, the Brooks insulator being used throughout. The poles are fifty feet in height, and though very heavy are set with the greatest exactness, so that a range of three or four miles, such as may be seen in some of the streets, presents an elegant appearance. Some forty wires are carried under the Chicago river, through the Lake street tunnel, being attached to insulators placed at short distances apart in the top of the arch.

The new office of the Western Union Company, in the splendid marble building recently completed at the corner of Washington and La Salle streets, is one of the principal lions of Chicago, especially in the eyes of telegraphers, therefore a brief description of the same will doubtless be in order. A number of large, elegantly finished rooms are occupied by the Company upon the first, third and fourth stories. The corner room on the first floor contains the receiving department and manager's office. The rooms on the third floor are occupied by Gen. ANSON STAGER, Superintendent of the Central Division, and Col. J. J. S. WILSON, District Superintendent, with their assistants and clerks. The most interesting feature of the establishment is, of course, the operating department, which occupies two spacious rooms on the fourth floor, which are each well lighted, and what is quite as important, well ventilated. Most of the instrument tables are made large, and divided into sections to accommodate four instruments. The smaller room is occupied by the lady operators, and is fitted up in a somewhat similar

manner. The larger room contains fifty-eight instruments, and the smaller thirty, although a few of these are not yet in actual service. Among the instruments are four sets of button repeaters and four sets of Hicks'. The switch is a very elegant piece of workmanship, and is arranged for one hundred wires, the number in use at present being about sixty. Two cups of Daniells' local are employed for each instrument, with a common return wire for all. I noticed that the Brooks paraffined jars were employed here. If it were generally known how much battery material is saved by their use they would speedily be found in all our offices.

The battery room is on the same floor, and is exceedingly well arranged in every respect. The floor of the room is of cement, and proper arrangements are made for carrying off the deleterious gases arising from the batteries. Four Grove batteries are required to work the wires leading from the office—there being two of sixty-five and two of twenty-five cups each. I was informed that two large rooms adjoining the operating room were to be fitted up respectively as a lunch room and reception room for the operators, the latter to be supplied with books and newspapers, &c., making a pleasant place of resort, which impressed me as being a most excellent idea.

The number of operators employed here is about fifty-five, seven of whom are ladies. Mr. R. C. RANKIN is manager of the office, and Messrs. SWAIN and MAYNARD have immediate charge of the day and night force respectively.

Taken as a whole the telegraphic arrangements of the Western Union Company, in and about Chicago, are exceedingly creditable to the company and to the officers and men who have designed and carried out the work. Some of the details, however, afford room for improvement, especially the arrangement of the wires in the tunnel, and the manner in which they are led into the office. I must confess that it would also have been more to my taste if the instrument wires in the main operating room had been outside, instead of placing them beneath the floor. The wires are the characteristic feature of a telegraph office, and when artistically arranged can be made to add greatly to the appearance of the room; and, what is more important, they usually work much better, and are less liable to derangement, than when concealed inside of flooring or partitions.

The Atlantic and Pacific, Great Western, and Mississippi Valley Companies have offices centrally and conveniently located, and appear to have no trouble in getting as much business as they have facilities for doing. If they wish for more, good working wires and more of them will bring a full supply. I visited also the office of the Fire Alarm Telegraph, which in Chicago is quite an extensive concern, and run to the entire satisfaction of the public by the efficient superintendent, Mr. E. B. CHANDLER. As it has been fully described in your columns I need only to mention it here.

A new company, recently organized here for the construction of private telegraph lines, etc., have entered upon a very promising field, and having the right to run the wires upon the poles of the Western Union, their facilities for giving satisfaction to their customers are unusually great. I have no doubt the enterprise will be a prosperous one. If time and space permitted me, I might furnish much other matter of interest to the readers of THE TELEGRAPHER in relation to Western telegraph matters, but for the present I must forbear. I cannot conclude these hastily written notes without expressing my sincere thanks to both the "rank and file" of the fraternity throughout the Northwest, who, without exception, used every means in their power to render my trip a pleasant one, and to show me everything worth seeing in their respective localities. May their individual prosperity keep pace in future with the growth and development of that youthful but wonderful region.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion.

No notice will be taken of anonymous communications.

Unfairness of the Journal of the Telegraph.

TO THE EDITOR OF THE TELEGRAPHER.

THE *Journal of the Telegraph* of August 16th contains an editorial, in which the writer "regrets to see among the list of patents one granted to our good friend, C. Westbrook, for the transmission of messages by the action of a lever, the end of which, by passing over the surface of the letters of the Morse alphabet, indented on stout paper, performs automatically the process of manipulation." The provocation of these regrets is stated to be "because some time ago we took especial pains to point out that this very process was one of Prof. Morse's earliest devices"—that the "same plan has been tried in Europe by the use of metal strips," &c. These statements are intended to throw a suspicion upon the validity of my patent, for purposes best known to the writer.

Why the editor of the *Journal of the Telegraph* should have taken "especial pains, some time ago," to warn me against poaching upon the automatic preserves, is a puzzling question; but some light may be thrown upon it when we suppose that this "some time ago" was during the pending of my application for a patent, and the friendly effort of the *Journal* may have been born of a laudable desire to assist the Patent Office in disposing of the case. Or, was it to enlighten "our good friend C. Westbrook," and thereby save him the expense of that "patent fee?"

It is not my purpose at this time to pursue this question further, but to ask you to insert in your paper the following reply to the *Journal's* attack, which was duly forwarded to that paper, but which the editor has refused or neglected to publish:

EDITOR JOURNAL OF THE TELEGRAPH.

My attention has been called to an article in your issue of August 16th, in which my recently patented improvement in automatic telegraphy is commented on in a manner which seems to call for some notice at my hands. Permit me to state that I do not question your right to express an opinion upon the merits or demerits of my automatic method, but, in your attempt to throw a doubt upon the validity of my patent, your assertions are unsupported by evidence. You make an indefinite allusion to some plan that has been tried in Europe, "by the use of metal strips indented in a similar way, and to accomplish a similar purpose." All devices for automatic transmission are for the accomplishment of a "similar" purpose, and "similar" means are employed; the object being to reproduce telegraphic characters over a line in a more rapid manner than can be done by hand. In some cases this is accomplished by the perforated paper process, in others by the use of movable types. Another plan is that of Chaudassaigne & Lambrigt, who use a metallic strip and a non-conducting ink; but none of these methods are like mine, further than that the transmission is effected by the action of a lever, or its equivalent, in passing over the prepared strip or type.

You state that "this very process was one of Prof. Morse's earliest devices—that it forms part of his early papers, and, if we mistake not, is one of the specifications in his patents." If this is so, the fact can readily be ascertained. If it is not so, it must be admitted that I have just cause to complain of an unwarrantable attempt to depreciate the value of my invention. I am aware that one of the earliest plans of Prof. Morse was the transmission of his characters automatically, by the "type and port-rule" arrangement. I am not aware that he used his embossed or indented strips for that purpose.

My method consists simply in the transmission and reproduction of messages automatically from the embossed or indented strip, as produced by the Morse process of recording dots and lines.

Was the Morse strip ever used to transmit from until I used it for that purpose? When? Where? By whom? C. WESTBROOK.

A Reply to "Grass Valley."—That Steel Wire Again.

SAN FRANCISCO, CAL., Sept. 3d.

TO THE EDITOR OF THE TELEGRAPHER.

YOUR correspondent, "Grass Valley," in THE TELEGRAPHER of August 21st, having seen fit to take exception to my criticism, in a former communication, of the steel wire which the C. P. R. Co. propose using in the construction of their mountain lines, I consider it no more than justice to myself that I should review his remarks. In his communication he has presented your readers with what he represents as quotations from my

letter, but, by reference, I find that the quotations have been so transposed as to place the matter in the best possible light for his arguments.

Passing entirely over his personalities, which I regard as beneath my notice, we arrive at the assertion that the double transmission introduced on the lines of the A. and P. Company proved a failure. This assertion is a downright falsehood, as the system worked well, and was only discontinued on account of an insufficiency of business to demand its introduction between any two of the A. and P. Company's stations. In making the assertion that it greatly resembled a system previously illustrated in THE TELEGRAPHER, "Grass Valley" exposes his total ignorance of the subject, as can be proved if necessary.

I do not propose to enter into any argument with "Grass Valley" in respect to the merits of small steel or large iron wire, but would respectfully refer him to the "Notes on Telegraphic Construction," by Mr. M. G. Farmer, recently published in THE TELEGRAPHER, where he will find my views on the subject fully borne out by the best electrician in America.

As regards the assertion that I have ever tried in my remarks to throw any ridicule on the railroad superintendent, or any of his inventions, I can only say that it was furthest from my intention to do anything of the kind; the superintendent's reputation as an inventor and line constructor are too well known on this coast for me to think of such a thing. But, when he attempts the introduction of an improvement so far at variance with all known rules of telegraphy, he must expect to be subject to criticism until his improvements have proved successful.

The steel wire which it is proposed to use is said to have a breaking strain of 2,000 lbs.; a wire of No. 7 gauge, hard drawn, would give a breaking strain of 2,200 lbs., and, at the same time, be four times as good a conductor as the steel, and the extra 200 lbs. strength of the iron wire would more than counterbalance the increased strain necessary to hold it in suspension, and its cost would not be more than three fourths that of the proposed steel.

Had I the inclination to reply to the personal remarks in "Grass Valley's" letter, I have no doubt but, in giving a slight history of the manner of locating crosses and grounds, erecting local batteries and connecting of instruments, as practiced in the Sacramento office of the C. P. R. R., I should have decidedly the best of the argument. But enough of that for the present. Should your correspondent see fit to reply to this, you may hear again from
BEAR VALLEY.

Indignation of Washington Operators.

WASHINGTON, D. C., Sept. 13th.

TO THE EDITOR OF THE TELEGRAPHER.

CONSIDERABLE indignation has been caused among the employes of the Western Union Company here lately, by the arbitrary course pursued by the manager of the main office. He has recently resuscitated and posted up in the operating room a number of orders, with which all the employes are perfectly familiar, and which, as a general thing, they have not been guilty of disobeying. What has especially excited resentment is the establishment of a time-keeping arrangement, and posting up notices in conspicuous places in the office requiring all employes to register the time at which they are on hand for duty.

This demonstration is regarded as uncalled for, as, with three or four exceptions, who are well known to the manager, the employes are always promptly on duty at their appointed times. Notwithstanding the resentment felt by the employes generally, all concluded to submit except Mr. A. J. Lombard, combination operator, who declined entering his time from conscientious principles. It is well known here that he has been a hard-working and steady operator in the office for nearly four years, and has always been prompt in his attendance at the office. He has many friends here and elsewhere. It is understood that Mr. Lombard, expecting that he would be discharged for his refusal to comply with the timing order, quietly sent in his resignation, assigning ill health as the cause, giving the company twenty days' notice. The next day he was summarily dismissed by the manager in charge here, and it is also understood that his case is being used as a warning to the other employes to enforce submission on their part. WIDE AWAKE.

An Unprincipled Telegrapher.

NEW YORK, September 14.

TO THE EDITOR OF THE TELEGRAPHER.

It is desired by the victims of a youthful telegrapher, who, having exhausted this city as a field for the exercise of his peculiar and disreputable characteristics, has now sought "fresh fields and pastures new," to put their professional brethren on guard against him.

The individual referred to is Mr. John F. McHugh,

who for some time past has officiated as an operator at the main office (No. 145 Broadway) of the Western Union Company. The following is an accurate personal description of this smart genius: He is about nineteen years of age, five feet five inches in height, brown hair and blue eyes. Though young in years he appears to be well advanced in the practice of his nefarious arts. He not only swindled his associates here by borrowing money of them, which he evidently had no intention of repaying, but by engaging them to do his work, promising to pay them therefor, and then resigning, drawing his salary and leaving for St. Pierre without paying his debts or acknowledging services received. His late associates here caution those with whom he may hereafter be associated against his "taking" ways; as one who would so deliberately swindle his brother operators and friends, would not, in their opinion, hesitate to improve any similar opportunities in the future.

SEVERAL VICTIMS.

A Telegrapher's Silver Wedding.

RUTLAND, Vt., Sept. 11th.

TO THE EDITOR OF THE TELEGRAPHER.

MR. AND MRS. E. W. SMITH, of Ludlow, Vt., celebrated their silver wedding on Wednesday evening, the 8th instant. It was an occasion of rare interest, and was attended by a large number of friends. A special train, conveying Governor Page and about forty guests, left Rutland at 7.30 P. M., arriving at Ludlow at 8.30. Mr. Smith, who has been railroad and express agent and telegraph operator for the past fifteen years, owns a fine residence and spacious grounds, which, together with a pavilion erected for the occasion, were tastefully decorated and brilliantly illuminated. The gifts amounted in value to over four hundred dollars, among which I noticed a silver tea set from Dea. J. R. Smith, of Fond du Lac, Wis.; a French China breakfast, dinner and tea service from their friends in Ludlow; silver ice pitcher and goblet—the latter representing a telegraph man setting poles—from Mr. Smith's telegraph associates; coffee urn, oyster tureen, cake basket, butter dish, spoons, knives, forks, and many other articles of value from other friends. All present seemed to enjoy themselves, and at a late hour departed well pleased with the kind reception tendered them by Mr. and Mrs. S. R.

Business Improving.—Indications Good for the Coming Season.

WASHINGTON, D. C., Sept. 12th.

TO THE EDITOR OF THE TELEGRAPHER.

SINCE my last letter matters in Washington have been brightening up somewhat. Business is increasing, and, from the indications, we expect to do some heavy work this coming winter.

We learn the Western Union Company will want from ten to twelve first class operators as soon as Congress convenes. This is either indication of heavy work or that they intend to give their operators a little easier time than at the last session.

Most of the operators who have been away on vacation are returning, and by the end of this month nearly every one will be at his post.

Telegraphic news has been dull this week, and we have nothing of interest to lay before readers of THE TELEGRAPHER. Some items have been handed me with a request to forward for publication, but I deem it best to withhold them for the present.

Mr. McDONALD, of New York, paid us a flying visit last week. Mr. McD. is on his way to New Orleans to accept a situation with the W. U. Co. We also had the pleasure of seeing Mr. Stevens, of Boston, who did not forget to pay his friends of the key a visit in his travels. SPRING.

TO CORRESPONDENTS.

SUBSCRIBER.—The first telegraph line established in the United States was a very short one, constructed of fine card wire, on Long Island, in this State, for experimental purposes, by Harrison Gray Dyer, in 1827. The first commercial telegraph line constructed was that between Washington, D. C., and Baltimore, Md., 1844, on which to test the practicability of the Morse system.

The first line actually in operation in Illinois was the one connecting Chicago with Milwaukee, of which the late Col. J. J. Speed was the principal contractor.

IN Boston, Mass., the gale of Wednesday, August 8th, severely damaged the fire alarm telegraph. The cable to East Boston parted, and was only recovered after eight hours' grappling.

A GOOD LAYER.—An enthusiastic Poultry-keeper writes to suggest that *The Great Eastern* should be now called *The Great Hen*, because it has laid so many cables and brought up some of them, too!

PERSONALS.

Mr. W. H. CLARKE, night manager W. U. Washington, D. C., office, who has been ruralizing about that city on a leave of absence for the past two weeks, resumes his duties next Thursday.

Col. M. S. COLBURN, formerly telegraph operator at Manchester, Vt., represents that town in the Legislature this year.

Mr. H. W. BROADGATE, of Racine, Wis., has taken charge of the Miss. Val. Nat'l Tel. office at Minneapolis, vice Miss NIXON, resigned.

Mr. HENRY HOPE, formerly of Prescott, Wis., has taken charge of M. V. N. T. offices at Red Wing, Minn., vice Miss CURRY, resigned.

HENRY McCRAY has taken charge of M. V. N. T. Company's office at Prescott, Wis.

Mr. SALMON has taken charge of the Miss. Val. Nat'l Tel. Co.'s office at La Crosse, Wis., vice Mr. ED. G. PATTON, resigned.

Mr. BAGLEY, the "rapid," has returned to 145 Broadway from a six weeks' sojourn at Saratoga.

Mr. BURNHAM, of the Fifth Avenue Hotel (Western Union) office, has just returned from a trip to Minnesota.

Mr. WALDO H. COLLINS, of No. 145 Broadway office, has gone East on a two weeks' vacation.

Mr. ARMSTRONG, of Canada, has taken a position in the Western Union Chicago office.

Mr. FRED. GAY, of 21 Wall street, Western Union office, has been rusticated at South Norwalk, Conn., during the summer.

Mr. D. T. BACON, superintendent of Atlantic and Pacific Telegraph lines on the C. S. and C. R. R., and of the railroad wires, has removed his headquarters from Sandusky to Urbana, Ohio.

Mr. W. H. NORTHWAY has been transferred from Blackberry Station, to Shopiere, Wis., on the C. & N. W. R. R. Telegraph.

Messrs. C. C. CLUTE, formerly of the City of Mexico and Vera Cruz Telegraph; JOHN F. McHUGH, formerly of the Western Union (145 Broadway) office, and CHARLES MERRITT, formerly of the No. 22 Broad street, Western Union office, have been engaged by the French Cable Co. for the St. Pierre office, and have sailed for the island.

Mr. A. J. LOMBARD, combination operator for the past four years in the W. U. Washington office, resigned on the 10th ulto, on account of the heavy work and ill health.

Mr. A. H. KANODE, of the W. U. Washington office, who has been absent on a two weeks' leave, returned to duty on the 9th ult.

Mr. THOS. MORRISON, operator at the State Department, Washington, D. C., left last Saturday on a month's leave.

Mr. CONNER, formerly of California, is substituting for Mr. MORRISON.

Miss A. E. BUTTERFIELD, of Springfield, Maine, takes charge of a new telegraph office at Ware, Mass.

Mr. L. E. BATHRICK, of the Western Union office, at Fitchburg, Mass., has resigned on account of ill health. Mr. B. was highly esteemed, both by his employers and by those with whom he was associated on the line, and his temporary retirement is regretted by them. It is understood that he will return to operating as soon as his health will permit.

Mr. C. GOODNOW, of Templeton, Maine, has accepted the position vacated by Mr. BATHRICK at Fitchburg, Mass.

Mr. G. M. SMILEY has accepted a position as operator at Grout's Corner, Mass., W. U. office.

Mr. A. H. SEYMOUR, whose resignation from the Western Union (145 Broadway) office was announced last week, has not retired from the business, as was erroneously stated, but is in the service of the Gold and Stock Telegraph Company.

Mr. H. H. TAYLOR, formerly operator at Fort Laramie, Wyoming Territory, has resigned, and is stopping temporarily at Antelope station, Nebraska.

Mr. MILLER C. BALDWIN, formerly of the Western Union office, has been appointed manager of the Atlantic and Pacific office, Chicago. The former manager takes a position as operator in the same office.

Mr. TINNEY, of Philadelphia; SMITH, of Louisville; and DANIEL TUCKER, jr., have taken positions in No. 145 Broadway (Western Union) office in this city.

Mr. W. F. LUCAS has been appointed manager of the Western Union office at Titusville, Pa., vice Mr. F. M. SCHNELL, resigned.

Mr. M. E. LUCE has resigned the management of the Oil City, Pa., office, to engage in the oil business. The situation has been filled by the appointment of Mr. F. A. STRUMM. Mr. Luce has been connected with the Western Union Telegraph Company for several years, he having opened the first telegraph office in Oil City. By his resignation the Company loses an experienced and faithful operator.

The following appointments have recently been made in the telegraph department of the Toledo, Peoria and Warsaw Railway: Mr. PATRICK WHITE, day operator at State Line, Ill. Mr. O. D. HINDMAN, night operator at Gilman, Ill. Mr. L. A. NEELEY, agent and operator at Brenton, Ill. Mr. H. B. GUNN, operator at Chatsworth, Ill. Mr. A. H. MCGREGOR, agent and operator at Chenoa, Ill. Mr. H. KIMBALL, night operator at El Paso, Ill. Mr. W. HUBBELL, train dispatcher, Peoria, Ill., in place of Mr. S. P. BELDEN, resigned. Mr. HUGH PATTERSON, train dispatcher, in place of Mr. E. S. NEEDLES, resigned, to accept a similar position with the Chicago and St. Louis Railroad. Mr. W. N. ASHLEY, day operator at Warsaw, Ill.

THE TELEGRAPH.

(By Atlantic Cables.)

Telegraph Wires Prostrated.

PARIS, Sept. 13th.—A tempest yesterday prostrated the telegraph wires, and communication in every direction was temporarily interrupted.

LONDON, Sept. 14th.—A heavy storm prevailed yesterday, not only throughout England but on the continent. Telegraph wires are or have been prostrated in every direction, and reports of marine disasters are constantly being received. The regular cable route to Valentia, Ireland, has been deranged, and messages to and from America were forwarded by way of Dublin.

BERLIN, Sept. 15th.—In consequence of restrictions of the French Cable Company, the Federal Telegraph Administration of the North German States has resolved to forward all telegraphic despatches for America via Valentia, without exception.

LONDON, Sept. 15th.—Telegraphic communication between Russia and China has been interrupted by inundations in the vicinity of Lake Baikal, Siberia. The wires are prostrated for miles, and many stations have been destroyed.

The French Atlantic Cable.

It was said that Mr. Varley, the electrician, went to Brest for the purpose of remedying a fault in the French cable, at a point about 1,000 miles from the French coast, and that Mr. Varley, without raising the cable, "hoped to be able, by some very clever manipulation of electricity, to produce at the precise spot of the fault an effect similar to electrotyping on the surface of the conducting wire, and by this means to prevent the escape to earth of any portion of the electric current." The statement has been contradicted. Mr. Varley, it appears, went to Brest solely for the purpose of connecting the Brest with the Minou station. According to the latest accounts the line was in all respects working satisfactorily.

The Last Telegraph Consolidation.

THE following despatch from San Francisco, Cal., gives the Western Union Company's version of the absorption of the Atlantic and Pacific States Telegraph Company's lines:

"SAN FRANCISCO, Sept. 14.—The Western Union Telegraph Company have purchased the lines of the Atlantic and Pacific States Telegraph Company for about sixty per cent. of their actual cost of construction. By this arrangement the old company is enabled to increase its facilities for doing business at once, instead of waiting for the construction of new lines over the same territory, which they had in contemplation. The purchased property was all new within the year, and in excellent condition. Its late owners complain bitterly of their heavy losses in the efforts to give the public competing telegraph communication.

The Western Union has not increased its rates anywhere in consequence of the consolidation, but will announce material reduction to all points on the 1st of October, *prox.*

Guaranteed Messages.

A NEW arrangement has come into operation at the German Telegraph offices. Parts of messages, even single words, may now be registered, the Government undertaking to guarantee their correct transmission. Guaranteed words are underlined, and are simply charged a double rate. Hitherto the charge has been the full double price of the whole despatch.

The Gold and Stock Telegraph Company.

AT the annual meeting of the Gold and Stock Telegraph Company, held at the office of the Company, No. 18 New street, on Tuesday, September 7th, the following gentlemen were elected Directors for the ensuing year: Messrs. Tracy R. Edson, Geo. B. Field, A. F. Roberts, W. B. Czerke, S. S. Laws, D. G. Garth, and Joseph M. Cook.

At a subsequent meeting of the Board of Directors Mr. George B. Field was elected President, Mr. Thomas Cooke, Vice-President, and H. L. Hotchkiss, Secretary and Treasurer.

Electric Beacons.

ON Monday evening last Mr. Thomas Stevenson, C. E., Edinburgh, conducted an experiment at Granton, with the view of showing the practicability of illuminating beacons and buoys at sea with the electric light, produced by means of a battery on shore. A submarine cable, fully half a mile in length, was laid between the east breakwater of Granton harbor and the chain pier at Trinity. The operator occupied a station near the centre of the breakwater, and the light was shown at the point of the pier in front of an ordinary light-house reflector, producing a most brilliant flash. The flashes were emitted with great rapidity; as many as 500 can be transmitted in a minute, but the machine can be regulated so as to send one every second, or at any other desired interval. The experiment gave entire satisfaction.—*Engineering.*

Wonders and Blunders of the Telegraph.

THE most remarkable feat of telegraphic legerdemain, since the transformation of ex-Secretary Borie's name at the time of his appointment, was performed in the despatch to the New York Tribune last week, giving the names of the gentlemen upon whom Brown University conferred honorary degrees. Out of the nine names given two only are correct. Horatio Nelson Slater, of Webster, Mass., is changed into "Horatio Nelson and Slater Webster," while John Howard Appleton, the professor of chemistry, figures simply as "John Howard of Appleton." It announces finally, as a fitting close to its climax of errors, that doctor of laws was conferred upon the "professor of Greek in this University, Rowland Gottayard, of Peacedale, R. I.," which ridiculous cognomen is intended for Rowland G. Hazard. The Providence Press says: "The readers of the Tribune will wonder, no doubt, at what time Professor Harkness was superseded in the chair of Greek, and be surprised that his successor should have such a funny name."—*Springfield Republican.*

Auroras and the Sun.

THE observations of scientific men, during the last half century, have developed some highly interesting facts respecting the exhibitions of the aurora borealis and the appearance of spots on the sun. Captain Sabine has ascertained that the aurora has periods of great activity, recurring every ten years, and that the magnetic needle exhibits extraordinary perturbations during these displays, which also greatly affect telegraph wires. Hofrath Schwabe, a German savant, has in like manner discovered that the spots on the sun increase and diminish in a ten year cycle; and what is more remarkable, when that ten year cycle is compared with the ten year magnetic cycle, the two are found to be identical—the epoch when the greatest number of sun spots can be seen corresponding always to the years in which auroras are seen most frequently and with the greatest splendor. It appears, further, that the earth sympathizes instantaneously with any marked changes or processes taking place on the sun's surface. In the year 1859 English astronomers observed a strange, bright light break out at a certain point on the sun's surface. At the very same instant the magnetic instruments at Kew were violently disturbed. Magnetic storms swept instantaneously—so subsequent observations proved—through both hemispheres. At Washington and Philadelphia telegraph operators received sharp shocks, and in Norway telegraph machinery was set on fire. Boreal and austral auroras were seen that night with unusual splendor. A multitude of circumstances combined to prove that the disturbances upon the sun's surface had instantaneously communicated to the earth magnetic thrills, which vibrated from pole to pole.

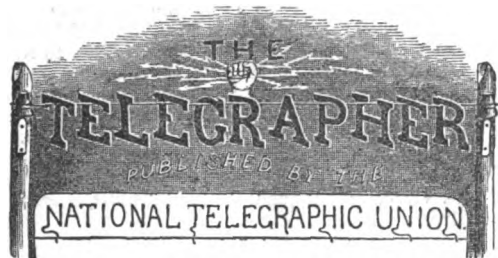
Timely Precaution.

THE following message was recently received for transmission at the Palmer, Mass., office:

"To J. O'F., New York.

"Your wife died yesterday. We will wake her to-night. Come home.

"P. S.—Don't open this for two hours, so as to prepare yourself for the melancholy news. P. O'B.



SATURDAY, SEPTEMBER 18, 1869.

J. N. ASKLEY,.....Publisher and Editor.

OFFICERS OF THE NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG...Box 248 P. O., Washington, D. C.
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Annual Convention N. T. U.

By and with the advice and consent of the Executive Committee and a majority of the Delegates, the meeting of the Seventh Annual Convention of the National Telegraphic Union is hereby postponed.

The Convention will assemble at the Western Hotel, Cortlandt street, New York, on Thursday, September 23d, at ten o'clock, A. M.

W. H. H. CLARK,
Rec Sec'y.

WM. H. YOUNG,
President.

THE office of THE TELEGRAPHER has been removed to Nos. 78 and 80 Broadway, Room 48.

THE CONSTRUCTION OF TELEGRAPH LINES.

THE telegraph has become so interwoven in all the relations of civilized communities as to be indispensable. In the last number of THE TELEGRAPHER we reprinted from the *London News* a statement of the cable lines projected and in course of construction, by means of which telegraphic communication around the world will be established. In connection with that article we submitted a few reflections upon the future of the telegraph, indicating further telegraphic progress and necessities. One point made in our former editorial we desire to refer to again, and more at length—that is, in regard to the character of the lines constructed, especially in this country.

When the telegraph system was first introduced it was to be expected that the lines then built would prove temporary, and that many errors and mistakes would be made in their construction. The telegraph was new, and the proper and most economical and effective methods of construction could only be learned by experience. Everything necessarily depended upon experiments to be made. It was to be expected that such knowledge and experience would prove costly, and that success, either practically or pecuniarily, could only result from the accretion of knowledge.

The telegraph in this country has now been in operation twenty-five years. In that time hundreds of thousands of miles of line have been built. The original investors, of course, generally lost the money invested, but the benefit to the world has more than compensated for individual losses.

It is but natural and reasonable to expect that the experience of this quarter of a century should have rendered obsolete the defective construction which characterized the earlier lines, but it has not done so. The lines now built, and being built, are for the most part con-

structed in the same defective and crude manner as that which rendered the earlier lines inefficient, temporary and costly. The same errors are repeated year after year, and immense as has been telegraphic development it has been limited and retarded thereby.

In the present stage of electrical and telegraphic knowledge and experience, lines should be built whose successful operation and comparative freedom from interruption should be as certain as the demonstration of a problem in mathematics.

In the construction of telegraph lines the best attainable talent should be employed. The proper size and conductivity of the conductor employed should be mathematically determined, the points of contact by which the escape of the electrical current to the earth is possible should be reduced to the minimum, and the insulation used should be so nearly perfect that, under ordinary circumstances, the wires could be used with unfailing certainty. A conductor offering a resistance which tends to allow the escape of the current at every possible opportunity, and an insulator which, in a storm, fails to maintain its insulating properties, is a disgrace to the telegraph system of the present day. In fact, however, a suitable conductor and a reasonably perfect insulation are the exceptions on American lines.

In too many instances the men employed to superintend telegraph construction have no scientific acquaintance with the properties of the medium for which they are providing a conductor. They are usually employed because they are cheap men, to build cheap lines. To them it is of no importance or of very little moment how the lines will work, or how long they will prove adequate for the purpose for which they are built. All they are expected to do is to supply lines which, when first completed, will work sufficiently well to be received by the companies for whom they are constructed. Whether they will ever prove adequate to transact a remunerative business is nothing to them.

Our whole system of telegraph construction requires reforming. When a line is to be built a telegraphic expert should be employed to superintend its construction, who shall bring to his task knowledge and experience which would insure something like intelligent and reliable results. He should be entirely free from pecuniary interest in the construction, and paid by the company a fair salary, to insure it against swindling and inefficiency on the part of the contractors.

There are a number of telegraph experts who know just how lines should be built, but these are seldom if ever employed for this purpose. Were they encouraged as they should be, and given such supervision of construction, we might expect a decided improvement in the character of the lines built. Telegraph operators would not, as now, be tormented by crosses, escapes, etc.; the working of telegraph lines would be as reliable as any other business; and although the original expenditure might be increased, the result would in the end prove really economical.

When will these desirable reforms and improvements in telegraph construction be made?

The National Telegraph Company.—Attempt to Coerce Subscribers.

As a matter of duty, we have, from time to time, exposed the fraudulent pretences of the National Telegraph Company, a concern long since defunct—in fact practically still-born—and had supposed that it had extorted the last dollar possible from its deluded victims, with the twenty thousand dollars received in response to its call upon the subscribers to its stock, made some months since.

It appears, however, that the managers of that company are not content with the last contribution, but seek now to force upon its unfortunate subscribers still further loss and sacrifice. The response to their call appears to have convinced the managers of that moribund concern that the fools are not all dead yet—which fact the ex-

perience of that company has certainly demonstrated—and they are now trying to coerce subscribers, who decline to respond to their seductive representations and demands, to "shell out."

The following is a copy of a letter which is being sent to Western victims:

"CHICAGO, Sept. 5th, 1869.

"To ———, Esq.

"Dear Sir—The National Telegraph Company has already made a demand upon its subscribers for the instalments due upon its capital stock for the months of June, July, August and September.

"Your instalments are still unpaid, and we are instructed by the company to take immediate steps for their collection. Awaiting your prompt attention to the same, we are,

"Yours respectfully,
"CARTER & BECKER,
"Attorneys."

We again advise the subscribers to the stock of this company not to submit to any further extortion. Every dollar so invested, like that previously paid, will be a total loss, without the remotest chance for return. The company has no legal or equitable claim upon its subscribers, for these among other reasons:—In the first place, the condition upon which the subscriptions became valid has not been fulfilled. The capital stock of ten millions of dollars has not been *bona fide* subscribed, or even one half of it. The actual subscriptions to the stock are a little under four and a quarter millions of dollars, upon which only thirty-five per cent. can in any event be collected. No subscription is valid or can be counted unless one per cent. in cash has actually been paid thereon, and in equity such subscriptions are invalid, even if the one per cent. be paid, unless the parties subscribing are pecuniarily able to pay the balance on their stock. It is easy enough to fill up a subscription with the names of Tom, Dick and Harry for fabulous amounts of stock, but such subscriptions are not legally valid as against *bona fide* subscriptions.

In the second place, most of the subscriptions were made three or four years ago, many of them upon false representations. And the company having failed not only to carry out its enterprise, or to build, buy or lease a single mile of line, cannot in equity hold subscribers to its stock.

In a court of equity this, and the fact that the subscription list has been and is held as a merchantable property, and efforts made to sell it out for a consideration to parties not originally interested in the enterprise, would be held to invalidate the subscriptions.

Our opposition to this concern is the same as to all telegraph humbugs—that they defraud the public of its money and property without a consideration, and that they stand in the way of and retard the establishment of valid and permanent competing telegraph enterprises.

The Great Gale of September 8th.

THE storm which was referred to last week as having prostrated the telegraph lines at the East, was more severe than was at first supposed. It was a hurricane, such as has not been experienced in that section of the country for more than fifty years. The damage caused by it, brief as it was (lasting only an hour or two), will cost millions of dollars to repair. Buildings were blown down, trees torn up and destroyed, vessels wrecked, and many lives lost both on land and at sea. The telegraph lines were in some places completely demolished, and telegraphic communication between New York and Boston was not restored until ten o'clock Thursday morning, and not fully reestablished until Friday morning. Of course communication with Europe was interrupted by both lines, and the lines connecting with the French Cable at Duxbury, Mass., were not in working order until Friday morning.

A despatch from San Francisco, Cal., dated Dec. 12th, states that the Western Union and Atlantic and Pacific States Telegraph Companies have been consolidated.

The Late Josiah B. Thompson.—His Business Continued.

MANY of our readers will learn with regret of the death of Mr. JOSIAH B. THOMPSON, of Philadelphia, who has for many years been engaged in the manufacture of insulated wire, for telegraphic and other purposes. The wire manufactured by him has always maintained a high reputation among instrument makers and electricians, and of late years he has supplied the greater portion of the wire used in the construction of telegraphic apparatus in this country. As will be seen by reference to our advertising columns, the business will be carried on in future by Mrs. THOMPSON, at the same place.

Thomas W. Knox.

OUR friend, Mr. THOMAS W. KNOX, well known to telegraphers from his connection with the Russian extension telegraph enterprise, has taken charge of *Frank Leslie's Illustrated Newspaper*. We congratulate Mr. LESLIE on having secured his able editorial services, and welcome Mr. KNOX to the editorial fraternity.

The Eclipse.

PROF. G. W. HOUGH, of the Albany Observatory, has published in the *Albany Evening Journal* a very interesting account of the observations of the eclipse of August 7th, at Mattoon, Ill. The operations of the observers were much facilitated by telegraph accommodations kindly provided by officers of the Western Union Company, which Prof. Hough acknowledges as follows:

"To Mr. Orton, the President, and Gen. Anson Stager, Superintendent of the Western Union Telegraph Company, we are especially under obligations, for putting a continuous line of telegraph wire of nearly one thousand miles in length at our disposal, for the purpose of securing time from the Dudley Observatory. Our thanks are also due to the managers of the following offices, all of whom were interested in the success of the work: Mr. C. S. Jones, manager of the Albany office; Messrs. Hucker and Slacer, Buffalo; Messrs. Wright and Tindall, Cleveland; Messrs. Armstrong and Warren, Cincinnati; Mr. J. F. Wallack, Indianapolis; Mr. Patten, of Mattoon. The necessary connections at the Dudley Observatory were made by Mr. Thos. E. McClure and Mr. H. L. Foreman.

"A continuous circuit was secured on the nights of the 5th and 7th, when the Dudley Observatory sidereal and mean-time clocks were compared with the clock and chronometer at Mattoon.

"The mean daily rate of the clock was found to be 15.54 seconds slow. As the last comparison with the Dudley Observatory time was only 5 hours after the eclipse, it is presumed the time was very accurately determined."

The Great Eastern and the Indian Cable.

NOVEMBER 10 is the date now fixed for the departure from the Medway of the Great Eastern with the Indian cable on board, for laying down between Aden and Bombay. The Great Eastern having undergone her refit, and the necessary repairs to her large iron cable tanks effected, the shipment of the cable was commenced August 28—the quantity stowed on board up to Saturday afternoon being close upon 300 miles. The cable is similar to the last laid down between France and America, with some slight improvements, to adapt it for the higher temperature of the water in which it will be deposited.

MARRIED.

TICHENOR—HARPER.—On Wednesday, August 18th, Mr. B. F. TICHENOR, telegraph operator and freight agent of the Toledo, Peoria and Warsaw Railway, at Peoria, to Miss LIZZIE HARPER, of Peoria.

DIED.

TOWNSHEND.—On the 26th ult., at Carmi, Illinois, Mr. A. W. TOWNSHEND, formerly of Washington, D. C. and brother to Mr. J. H. Townshend, one of the oldest operators on the Southern circuits.

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The above claims have been fully and fairly demonstrated, and that relating to sleet more especially, during the past winter.

Numerous and severe sleet storms, in sections where the Compound Wire is in use, have proved beyond question its great superiority.

One of the most severe of these storms (of the effects of which a very satisfactory report has been received by the company), occurred about the middle of December, in the Sierra Nevada mountains, and during which a No. 9 iron wire, on the lines of the ATLANTIC AND PACIFIC STATES TELEGRAPH COMPANY, was broken eighteen times within the space of one mile, while a COMPOUND WIRE by its side remained uninjured.

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Whenever a death occurs among those insured, an assessment one dollar and ten cents will be levied upon all. This dollar goes to the widow, orphans, or heirs of the next insured party deceased, and the ten cents to be applied to the payment of current and necessary expenditures.

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Many other highly complimentary letters have been received from Mr. J. VAN HORN, General Superintendent of the Southern Division, W. U. Co., and others, which want of space prevents publishing.

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SUBTERRANEAN WIRES, with Fibre and Bishop's Patent Compound
outside.

POLE LINE CORDAGE, with Fibre, and Bishop's Patent Compound
outside.

BRIDGE'S PATENT Electric Cordage.

BRIDGE'S PATENT Double Covered Cordage.

BISHOP'S PATENT COMPOUND WIRE,

or out-door use and office connections.

INSULATED WIRES,

with two Conductors, both plain and with braid outside, and a
great variety of other kinds made to order.

COTTON AND SILK-COVERED WIRES, both twist and braided.

This arrangement,

TOGETHER WITH OUR OWN

EXTENSIVE MANUFACTORY in NEW YORK,

and our great variety of TELEGRAPH MATERIAL in stock, fully
establish our claim that our stores are the

DEPOTS OF TELEGRAPH SUPPLIES IN THIS COUNTRY.

MODERN PRACTICE OF THE

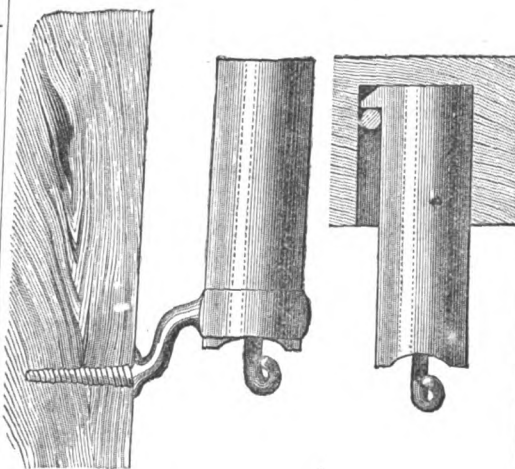
ELECTRIC TELEGRAPH.

By FRANK L. POPE.

PRICE.....\$1 50.

BROOKS'
PATENT PARAFFINE INSULATOR
WORKS,

21 ASPEN ST., North of 2123 CHESTNUT ST.,
PHILADELPHIA.



This Insulator shows a resistance of 100,000,000,000 B. A. Units,
excelling ordinary Insulators in humid weather fully one
hundred thousand fold.

Its great strength and durability make it the most economical
Insulator in use.

Every report received from them is of the most favorable
character.

ESTABLISHED 1842.

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COVERED WIRES,

made from Lake Superior Copper, warranted strictly
pure, covered with Hemp, Flax, Linen, Cotton, Silk or
other material, for Telegraph Instruments, Electro-mag-
netic Machines, Philosophical Apparatus, and all kinds of

Electrical Purposes.

Also, PLAIN, WOVEN, BRAIDED, ENAMELLED,
SHELLACED, PARAFFINED, and all kinds of

TELEGRAPH OFFICE WIRES,

Also, Telegraph Switch Cords,

many Patterns, Plain, Woven and Braided. Parties being
partial to any particular kind need only enclose a small
specimen in letter, and it can be imitated in every parti-
cular.

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C. THOMPSON,

(SUCCESSOR TO JOSEPH B. THOMPSON,)

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KNOX & SHAIN,

ESTABLISHED IN 1850,

MANUFACTURERS OF

TELEGRAPHIC

AND

ENGINEERING INSTRUMENTS,

No. 716 CHESTNUT STREET, Philadelphia.

(Two Medals Awarded by the Franklin Institute.)

Would caution Telegraph Companies who want our well-known
Premium Registers, with all our various improvements upon
them, that there is a very good imitation (in appearance only),
but none genuine unless they have our names and number upon
them.

EDMANDS & HAMBLET,
Electro-Magnetic and Magneto-Electric
Inventors and Mechanicians.

Office and Factory in CODMAN'S BUILDINGS,

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(Adjoining the American House.)

They manufacture Electric and other Fine Machinery
to order. Their Special Inventions are:

The Electro-Magnetic Watch Clock,
which is the best Watchman's time recorder in the world.

The Telegraphic Gas-Holder Gauge,
which constantly shows at the works the quantity of
Gas in the Holders.

A System of Many Clock Dials,
controlled electrically by one Standard Timepiece.

An Electric Vane and Register,
which shows within doors the direction of the wind at
all times.

**A Magneto-Electric Alphabetical Dial-
Telegraph.**

The Best and most Economical for Private Business
and Railroad purposes, requiring no voltaic battery.

THEY SOLICIT ORDERS FOR

Chronographs, and Astronomical Clocks,
Regulators, &c., &c.

DR. L. BRADLEY,

AT NO. 7 EXCHANGE PLACE,

Jersey City, N. J.,

Keeps constantly on hand and for sale his

Improved Telegraph Instruments.

Having adopted the use of

OREIDE METAL,

which is much RICHER AND FINER than brass, he now presents
his work in a style and of a quality that are unsurpassed.
His relays were awarded the

FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and
their superiority is generally acknowledged by operators who
use them.

Aside from the advantages apparent upon inspection of these
magnets, their acknowledged merits consist in the construction
of the helix, which was patented Aug. 15, 1865. This being of
naked copper wire, so wound that the convolutions are separated
from each other by a regular and uniform space of the 1-800th of
an inch, the layers separated by thin paper. In helices of silk
insulated wire, the space occupied by the silk is the 1-150th to
the 1-300th of an inch; therefore a spool made of a given length
and size of naked wire will be smaller and will contain many
more convolutions around the core than one of silk insulated
wire, and will make a proportionably stronger magnet, while the
resistance will be the same.

He is also manufacturing the

IMPROVED BUTTON REPEATER,

the cheapest, most reliable and simple repeater as yet invented

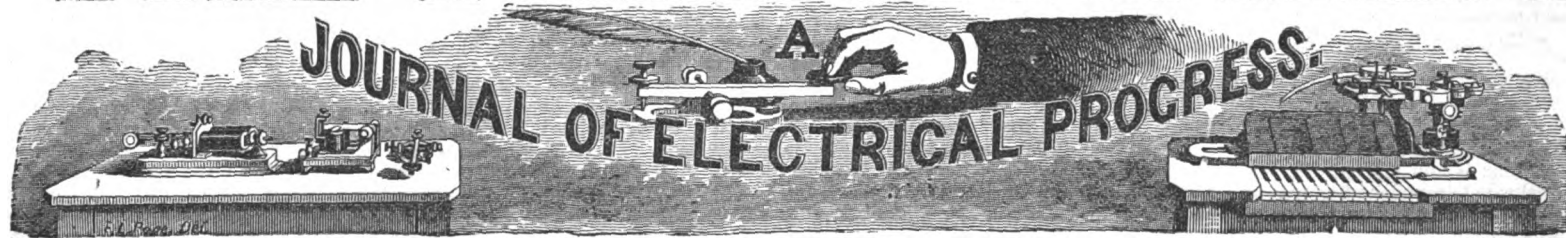
PRICES.

Button Repeaters.....	\$6 00
Relays, with helices in bone rubber cylinders (very fine).....	19 50
Small Box Relays.....	16 00
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Main Sounders, some as the above, with heavy armature levers without local connections, 75 cents less.	
Pocket Relays, with all the adjustments of the above, and good Lever Keys.....	22 00
Excellent Registers.....	40 00
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All other appliances made to order. Extra spools for replacing
such as may be spoiled by lightning, furnished at \$1 25 each.
Old spools taken at the price of new wire by the pound. Goods
sent to all parts of the continent, with bill C. O. D. Or, to save
expense of returning funds by express, remittances may be made
in advance by certified check, payable in New York, or by Post
office order, in which case he will make no charge for package.
He has ample facilities for furnishing all other kinds of Tele-
graph Supplies at lowest manufacturers' prices.

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THE TELEGRAPHER.



Vol. VI.—No. 5.

New York, Saturday, September 25, 1869.

Whole No. 167.

[Written for *The Telegrapher*.]

ARMY TELEGRAPH REMINISCENCES.

No. III.

BY AGITATOR.

A few days previous to the occupation of Corinth, Miss., by the Union troops, a sharp skirmish took place at Farmington, a small settlement situated about four miles from the former place. Confederate troops had occupied this position, but Beauregard being about to evacuate Corinth, these troops were called in. While their camp fires were yet smouldering, Gen. Pope, commanding the left wing of the Federal army, ordered a reconnaissance through Farmington, to feel the enemy's lines.

Four brigades of infantry, with two batteries, were detached for this work. Setting out early one morning their progress was necessarily slow, owing to the fact that a two mile swamp lay before them, through which corduroy roads had to be laid a large part of the way.

A squad of telegraph builders, with an operator, accompanied this expedition, stringing a wire on trees, and easily keeping pace with the advance guard.

At noon the command was all safely across the swamp, and a telegraph office opened in a farm house one half mile from Farmington, on the road to Corinth, and the wire found to be in good working order to Gen. Pope's headquarters.

Skirmishing continued in front until dark, when the firing gradually ceased, and all became quiet.

Cool nights and warm days are characteristics of the Southern climate, and sometimes, when the mercury rises to 100° at two P. M., it becomes necessary to have fires at eight; and on this particular night a bright fire blazed on the hearth, lighting the humble little farm house parlor with a rich glow. By the side of a small table sat an operator, intently listening to the click of a Caton pocket relay, and occasionally tapping the miniature key when returning an answer to headquarters, with which point he was conversing.

A group of anxious looking Union officers surrounded him, asking questions as to the morrow's work.

Three brigades had been recalled across the swamp, before dark, and flying rumors of attack made many anxious looking faces, left as they were with only one brigade facing a strong enemy, with only one avenue of retreat, across two miles of swamp, to the main body.

At midnight, however, all was comparatively quiet. The operator receiving permission to retire, had drawn up two old chairs and was sleeping soundly. What did he care whether an attack was made or not? Brig.-Gen. Buford, officer of the night, had stretched himself on a bed in one corner of the room, but not to sleep. The sense of responsibility prevented his eyelids becoming heavy that night.

When the gray streaks of dawn appeared in the east the picket officer came in with the report, "A heavy body of Confederates moving in front." This report was quickly despatched to Gen. Pope, the same being repeated every ten or fifteen minutes, as each orderly arrived. When day had fairly dawned an officer was seen issuing from the woods, riding as though he had encountered a ghost. He pulled up at the door, saying: "The enemy are advancing in force directly towards us, and are now coming across an open field on the double quick." Gen. Pope was informed immediately, and asked if it was necessary to remain there longer. The answer came: "Remain until you see the enemy or are driven out." The reply, "All right, General, you shall be obeyed," was tapped back with a degree of coolness on the part of the operator which should have inspired confidence. Gen. Buford, with his staff, were in readiness for departure, and you may rest assured the operator had a fast horse at a convenient spot.

Soon a deploy of men, wearing the butternut suits, were seen to swing out from the timber and surround a squad of blue coats. Three moments more and a dense volume of smoke arose from the bushes, a stunning report, and zip, whirr, crash went the grape and canister on all sides and into the farm house. A number of mounted officers at the gate served as a splendid mark. This whistling of shot said "driven out" to our telegraph man, and after telling the headquarters what had occurred, and taking up his instrument, a straighter coat tail than his never was seen before.

The first halt our friend made was at the rear of the brigade, who had already formed in gallant style to meet and check the enemy's advance. The wire was cut, and all was in readiness for connecting the instrument at this point, when lo! the pocket relay could not be found. It had spilled out of the inside pocket in that straight coat tail. "You got so badly scared you left it in the farm house," says one. "You threw it overboard, so your horse could run faster," says another. What should be done? Lieut. Smith, commanding a company of cavalry, acting as telegrapher's escort, volunteered to return as far as possible and search along the road. He soon returned successful, having discovered the instrument lying near the road unharmed.

That operator's look, which had been one of deep anxiety, now lighted up with joy. His reputation for coolness was at stake; it was now safe. Communication was resumed from this new position, and a report of the condition of affairs was soon sent to Gen. Pope.

The enemy had by this time placed several batteries in position, and were playing with vigor upon the point where the road entered the swamp, at which place our operator was now stationed. The rattling of shot and shell began to say *gii* pretty plainly. The office was again moved midway in the swamp, but finding that no more necessity for telegraph connection was required (the brigade being in full retreat), the operator fell back to headquarters.

Here he found that his first reports from the farm house were not credited by the General, who swore that our man was frightened, and did not know what he was about, adding that he would have him placed under arrest immediately! The sound of the first gun, however, convinced him, in a measure; and afterwards the report of Gen. Buford, wherein he mentioned the praiseworthy conduct of the telegraph operator, was sufficient evidence to wholly convince the General that all telegraphers "were not brought up in the woods to be frightened by owls."

Telegraphic Wonders.

It is remarkable how soon the greatest marvels cease to excite wonder by becoming familiar to us. Here is the ocean telegraph, for example, a fact far exceeding the wildest imaginations of the poet, the like of which is not shadowed forth in eastern romance, that has passed into a matter of every day commonplace. There is a passage in the *Spectator*, wherein Addison quotes from a mediæval writer of monkish Latin a description of a wonderful magnet, by means of which two lovers, separated by immense distances, might yet, under certain conditions, and at fixed hours of the day, hold sweet discourse with each other, annihilating space and time. But what to the dreaming monk was a play of fancy has been at once idealized and made real by the discoveries in electricity. It has become true, and proved far more wonderful than the original fiction. At every hour of the day and night, leaving the laggard sun behind, and distancing the planets, the lightning conveys from continent to continent the intelligence of all that men are doing on the surface of the globe. In lonely mountain passes of Alps and Himalayas, across sandy deserts, under stormy oceans and tropic seas, that wire now

stretches from the new world into the furthest recesses of the old world—the wondrous electric chain that binds all the world together. It is so wonderful, when we come to think of it, that it might excite the most unemotional writer to extravagance.

We have now three cables underlying the Atlantic Ocean from Europe to America. The communication from Constantinople to San Francisco is complete and instantaneous; that is to say, messages may be flashed in a few minutes between these two points by a preconcerted junction of the several lines. But the commercial energies of Europe are pushing the telegraph in all directions in the east. From England to Bombay the line will be opened direct by March or April of next year, and the spring of 1871 is likely to see Australia and China brought into the magic circuit of the world's daily intercourse. Meanwhile, the wire is to be carried westward as well as eastward, until the two ends are joined and Puck's girdle is put around the earth. A submarine cable from California to Japan is now under consideration, and the summer of 1870 may witness its successful laying down upon the vast plateau of the Pacific ocean.

Nor is this all.

It is a singular result of the success of the transatlantic cable, that people who make the voyage from shore to shore sail, for the time being, out of the knowledge and recognition of the world's daily history as absolutely as it they went into the planet Mars. They reach Liverpool or Brest, New York or Boston, and find themselves ten days behind the march of events. Matters that occurred a week before, while they were tossing on the ocean, and have become an old story, are referred to in the daily press as events long past, and, for an intelligent comprehension of the actual *status*, our ocean voyagers must make a careful examination of the newspapers for the fortnight of their exile. In long voyages of sailing ships captains and crews get into such hopeless arrears of facts and incidents, connected with their own immediate business in life, that they can never "bring up leeway." It is, therefore, desirable that some means may be devised of communicating intelligence to ships before reaching land, that they may alter their course, or seek another port than that for which they sailed, in accordance with exigences that have arisen while they have been at sea.

Accordingly, there is a project on foot for a telegraph ship to be stationed fifty-five miles off the English coast between Scilly and Ushant, connected by cable with Penzance, and furnishing intelligence to all vessels that desire it, from all parts of the world in telegraphic connection with England. This suggests a possible multiplication of such telegraph ships in all waters, dotting the ocean, and enabling captains to communicate with shipowners, and passengers with relatives, though the voyagers are yet far from their destined haven, and not in sight of land.

Great, indeed, are the marvels of the telegraph, and bewildering they would be to Dr. Benjamin Franklin, could he return to witness them. But we accept them as matters of course; the most astounding with the greatest composure.—*N. Y. Evening Post*.

An Amusing Blunder.

A PITTSBURG, Pa., correspondent sends us the following amusing instance of electrical twistification:

A message was taken in at a receiving office, not a thousand miles from Pittsburg, which read as follows:

"To ————"
"I said Gray and Lunt. "Sig. ————"

The sensations of the recipient of the message may be imagined when it was delivered in the following style:—

"I said Lay and Grunt."

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

The Steel Wire Vindicated.

SACRAMENTO, Sept. 9th.

TO THE EDITOR OF THE TELEGRAPHER.

THERE is still a misunderstanding concerning "that steel wire telegraph." The note signed by the agents of the American Compound Wire Co. does not state for which of the C. P. R. R. lines the compound wire was ordered. The Railroad Co. are not only building a line over the mountain, but also a two wire line from Sacramento to San Francisco, one hundred and forty (140) miles; a single wire from Sacramento to Marysville, fifty (50) miles; and a two wire line from the eastern base of the Sierra Nevadas to Promontory, at the head of Salt Lake, about six hundred (600) miles. It was for these lines that the compound wire seemed the most desirable, and for which it was hoped to be obtained. Tillotson & Co. tell us why it was refused, and how an "outside" wire manufacturer induced the Company's purchasing agent in New York to buy the common wire, claiming it to be as serviceable in every way. The compound wire was not intended for the mountain section, if a stronger wire of the same or less weight, and without a too high resistance, could be obtained.

At present there are five (5) wires over the mountain, and one extra wire through the snow belt, one (1) of which is compound, five (5) No. 9 galvanized wire. When the new line shall have been completed, the R. R. Co. will control over the Sierras a line consisting of two (2) steel wires and two (2) No. 9, galvanized. One winter's experience has shown the compound wire to be superior to No. 9 iron, and also that a stronger wire than the compound is required to meet cases of emergency, with a breaking strain of twenty-five hundred (2500) pounds, three (3) times that of No. 9 iron. It is expected the new wires will remain uninjured when No. 9 and compound have both gone by the board. Every precaution is taken to attain as near as possible a perfect insulation, and everything is being done with the view to secure a substantially constructed line. As was said in a former letter, it was not a question of resistance or conductivity, but to provide a line which could be relied upon at all times; and this it is expected will be accomplished by the new wires; for certainly a wire possessing three (3) times the strength of iron wire will stand much longer than either No. 9 or the compound. I have said that the compound was not intended for use on the mountain. There are several reasons for this. To produce a wire having the required strength would increase the size and weight so materially that it would make its use objectionable.

The copper sheathing is liable to become separated at the joint, and allow a deposit of water between the core and outside coating, causing rust, affecting the strength of the wire, and increasing the resistance.

When any weight falls on the wire it either breaks or draws up the slack; if only the latter, the wire is pulled through the iron hook, removing the copper sheath, which leaves nothing but the small steel core for a conductor. Increased resistance and a weakened wire is the result.

These objections, perhaps, would not apply to the compound wire when used for a line through an even comparatively level country; but the mountain section where the steel wire is to be tried is distinctly different, in every feature, from any country on the continent traversed by a telegraph line. If the Railroad Co. have any operators whose manipulation is so rapid that the resistance offered by the steel wire will not allow their dots and dashes transmission, they have two (2) No. 9, galvanized wires, which will probably carry their signals as rapidly as desired.

There is no one but who will admit that, for ordinary lines, the American Compound Wire is vastly superior to anything heretofore used. Its advantages over the ancient No. 9 is apparent at first sight—strength, conductivity and lightness—reducing the cost of construction, at the same time giving a more perfect working line; and it is unfortunate that the R. R. Co. did not secure this wire for their lines on the plains.

Will some electrician furnish THE TELEGRAPHER a statement giving the comparative resistance of American Compound, No. 9 iron, and a fine annealed galvanized steel wire?

Considering that the wire has not yet received a practical test, would it not be well to await results before condemning it? The first storm on the mountain will decide whether this wire does or does not accomplish the object for which it was used.

GRASS VALLEY.

The Telegraph on the Pacific Coast.

SAN FRANCISCO, Sept. 9th.

TO THE EDITOR OF THE TELEGRAPHER.

THE Central Pacific Railroad Company have nearly completed their lines from Sacramento to this city. They are at present stringing but two wires on their poles, which are to be devoted exclusively to railroad business.

Immediately on the completion of these two lines they intend the erection of two more, to be placed at the disposal of the public, in opposition to the Western Union Company, thus affording us at last cheap communication with the Eastern States. These lines have been very carefully constructed with the Brooks insulator, and three poles to the mile, and with the exception of that portion constructed with the steel wire, are undoubtedly the finest lines west of Salt Lake.

A new discovery in Telegraphy, that has just been brought to light by an operator who swings a key in an office not a thousand miles from Sacramento, is, that crosses in a line of telegraph may be effectually removed by a prompt reversal of the local battery in the office first discovering the difficulty. It seems strange that so easy a remedy for trouble of such frequent occurrence as crosses should not have been discovered before; but it goes to prove that operators who are closely penned up in their offices are not entirely debarred from acquiring a slight knowledge of practical telegraphy, notwithstanding "Grass Valley's" assertion to the contrary.

Messrs. Lundberg & Marwedel have just received one of Latimer Clark's Differential Shunt Galvanometers, with Rheostat, from the well known manufactory of Messrs. C. T. & J. N. Chester. The instruments are finished with that perfection of workmanship common to all of Chester's productions, and make a very convenient and portable apparatus, well adapted to the requirements of the long and poorly constructed lines on this coast. Messrs. Lundberg & Marwedel have just completed the first California built Register; also a Shunt Galvanometer, on the Varley plan, which present a neater appearance than even the English instruments.

The Atlantic and Pacific States Telegraph Company have recently completed a slight extension of their lines, taking in a few small up-country offices, of no earthly account to any one except the few subscribers who have combined to pay for the extension.

At a meeting of the stockholders of the A. & P. S. T. Co., held at noon to-day, Mr. James Gamble, Superintendent of the W. U. Co., was elected President, and all the other offices of the company were filled by gentlemen in the Western Union office. On the first of the month their office will be closed, and opposition telegraphy in California will cease for the present. Their failure is undoubtedly caused by the gross mismanagement to which the company was subjected. The first cost of their lines between this and Virginia City was nearly enough to have carried them to Salt Lake; and for the past six months their receipts have been gradually growing less and less, owing to the irregular manner in which their business has been conducted.

It seems to be an impossibility to convince the incorporators of telegraph companies that, in order to be successful, they must have a thoroughly practical man at their head; and to the want of such a person all the failures and interruptions experienced by the A. & P. S. Co. may be ascribed.

We hope that soon some solid Eastern company will take hold of this end of the country, and supply us with a thoroughly first class company.

BEAR VALLEY.

The Dominion Telegraph Company.

TORONTO, Sept. 18.

TO THE EDITOR OF THE TELEGRAPHER.

IT may be of interest to the readers of THE TELEGRAPHER to hear of the present condition and situation of the Dominion Telegraph Company. This Company has for some months past been in a state of suspended animation, as it were, but it still lives, and it is thought is about to enter upon a more prosperous and promising era.

Great dissatisfaction has hitherto existed among the shareholders on account of the contract with Mr. S. Reeve, under which it was claimed that he was paid twice as much per mile for construction and equipment of the line as the work was worth. The directors, finding that Mr. Reeve's unpopularity among the shareholders prevented payment of calls, took the happy method of "dispensing with his services" by "stopping the supplies," thus obliging that gentleman to surrender his contract.

The directors, in a circular to the shareholders, under date of Sept. 9th, announce that a satisfactory settlement has been effected with the late contractor, involving the surrender of his contract, the transfer to the Company

of the line built from Suspension Bridge to Toronto, and the cessation of all connection between Mr. Reeve and the Company.

The Company have now advertised for tenders to construct the line, and are determined to complete it to Ottawa (320 miles from Toronto) at once, and then to connect with the "People's Line," which has a line already built from Quebec through Montreal to Ottawa.

When these extensions are made the two capitals of Ontario and Quebec will be connected by competing lines with Ottawa, the capital of the Dominion of Canada; and, by line already constructed and in operation to the Suspension Bridge, with the competing lines of the United States. It is also intended by the managers of the Company to carry on the work energetically westward, to Sarnia and Windsor, opposite Detroit, Mich.

A. D.

The Telegraph in Omaha.—"The Telegrapher" Always Welcome.

OMAHA, NEB., Sept. 5th.

TO THE EDITOR OF THE TELEGRAPHER.

TELEGRAPH matters of interest in this portion of the moral vineyard are dull, and promise no improvement. This city, although quite a good sized telegraphic centre, is visited by few telegraph occurrences worthy of note, and a communication void of a death, marriage, promotion, or the periodical watch presentation, is not very entertaining to the fraternity.

The Western Union office in this city is presided over by the gentlemanly and courteous Frank Lehmmer, with a corps of such well known and efficient artists as Rosewater, Ayers, Armstrong, Smith and Drake. The office is pleasantly located, labor light, and the operators well paid for their services.

Mr. Flemon Drake, who attends to the counter, is noted for his urbanity of manner and sterling social and business qualities. He has lately effected a matrimonial alliance with one of Omaha's fairest daughters—Miss Helen Ingalls—and is now absent on a short tour in the mountains of Colorado. The wedding was of the *recherche* order, and the bride's *trousseau*, and the bridegroom's manly bearing during the ceremony, was pronounced *au fait*, creating a little pleasant chit-chat among the *bon ton* and *elite* of this city. Much happiness and many little Drakes to our good friend Flemon and his fair bride.

Mr. J. J. Dickey, of Chicago, long the private secretary of J. J. S. Wilson, Esq., has received the appointment of General Superintendent of Union Pacific Railroad telegraph lines, *vice* H. H. Cook, removed. J. J. Knudman has been designated as his assistant. Mr. Dickey has the benefit of many years of experience in railroad telegraphy, and already gives indication of a thorough and capable management of the lines over the great national highway. Mr. Cook will remain for the present in the railroad office in this city.

Mr. J. K. Bear, late W. U. operator and U. S. Express Company's agent at Brownsville, Neb., has robbed the latter company of \$12,000 and "vamosed the ranche," leaving a wife and child to mourn his sudden departure. A reward of \$1,000 is offered by the Express Company for his apprehension. Bear was shot and robbed of \$1,000 last winter, but his recent act has given rise to the suspicion that he shot and robbed himself on that occasion.

Charlie Paxson, a very popular artist in the West, has been despatching trains on the Union Pacific for several weeks past, but has now emigrated to the Sweet Water country, to engage in some mercantile pursuit. Success attend the jovial and genial Charlie.

THE TELEGRAPHER is always a welcome visitor, and its correspondence is read with a great degree of interest. By the way, what has become of the "Chicago, Pittsburgh and Cleveland operators?" I think the fraternity would be pleased to hear of their several conditions. Has it been improved? More anon.

QUILL.

TO CORRESPONDENTS.

POTOMAC.—Your letter unavoidably postponed till next week.

Several communications in type, and intended for this week, are unavoidably crowded out.

Mr. CHAS. T. DOZIER, of Vallego, California, claims to have invented an instrument by which the Morse sounders can be used in ocean telegraphy. He asserts that the construction is exceedingly simple, and it will work with as light currents as will the most delicate reflecting galvanometers now used in operating the Atlantic cables, and will be able to do twice the work, with far more ease to those operating it.

PERSONALS.

Messrs. GREGORY, of the Erie Railway lines; Fox, of the Bankers and Brokers'; and FLOWERS, have taken situations in the New York office, 145 Broadway, of the Western Union Company.

Mr. S. H. HUGHES, formerly of Minooka, Grundy Co., Illinois, has taken charge of Sheffield, Bureau Co., Ill., office.

Mr. DAVIDSON, formerly of Cincinnati, has accepted a situation in St. Louis Western Union office, in place of Mr. UNWIN.

Mr. J. A. TORRENCE, formerly of the W. U. St. Louis office, has been appointed manager of the Kansas City, Missouri, office.

Mr. D. E. LOCKHART has resigned from the P. & A. Oil City, Pa., office, with the intention of going to Chicago, Ill.

Mr. A. GROSSE takes the situation in the P. & A. Oil City office, vacated by Mr. LOCKHART.

Mr. FRED. C. LOOMIS, formerly of Pittsburg Western Union office, has been transferred to the Titusville office.

Mr. O. E. WAYS, Jr., of Baltimore, Md., has accepted the managership of the Western Union office at Parker's Landing, Pa.

Mr. E. M. NEWCOMB has accepted position as operator at Lansingburgh, N. Y., in place of Miss E. G. SMITH, resigned.

Mr. GERRITT SMITH, the efficient and gentlemanly chief operator on the Western wires at No. 145 Broadway, Western Union New York office, is on a visit to the West, on leave of absence.

Mr. JOE W. UNWIN, of the Western Union St. Louis office, has gone to Chicago, Ill.

Mr. L. D. PARKER, manager of the Western Union office at Quincy, Ill., has been appointed chief clerk to Mr. J. J. S. WILSON, Superintendent W. U. line at Chicago, Ill., to fill the vacancy caused by resignation of Mr. J. C. DICKEY.

Mr. C. KINNEY SMITH, late chief operator of the Western Union Company, at 145 Broadway, has been appointed manager of the Atlantic and Pacific Company, in this city.

Mr. ORIN JENKS, Jr., has accepted a position in W. U. Titusville, Pa., office.

FRANK GILMORE, of Titusville, has been transferred to Oil City.

Mr. PERRY McDONOUGH COLLINS returned from Europe, Wednesday, on steamer Scotia.

Mr. MATT. GORDEN has resigned his position in the A. & P. Albany office and gone West.

Mr. D. J. HARRIGAN, of Albany, accepts the position vacated by Mr. GORDEN.

Mr. GEO. LANCE, who has been acting as substitute in the W. U. Albany office for FRED. H. LAWRENCE, has accepted a position in the Buffalo office, same company, and enters upon the discharge of his duties Oct. 1st.

Mr. THOS. STEWART, Jr., who has been employed in Saratoga Springs during the summer season, is now subbing for J. F. HARK, W. U. Albany office.

Mr. P. A. EARLY, formerly of Darlington, Wis., has accepted the position of ticket agent and operator at Mineral Point, Wis., on the Mineral Point Railroad.

Mr. GEO. H. BOWKER, formerly of the Western Union office at Bangor, Maine, has accepted a position with the A. & P. Co. at the Produce Exchange.

Presentation.

ONE of those pleasant incidents which occur occasionally, and one long to be remembered, came off in this city on Saturday evening. Mr. T. M. Bates, Telegraph Superintendent of the Erie and Pittsburg Railroad, was surprised by a visit from a deputation of the telegraphers employed on the above line, accompanied by a few of their friends from the city. Mr. James K. Raleigh made a brief and pertinent address to Mr. Bates, assuring him of the kindly feeling of those under his supervision, and tendering him their best wishes, presenting him, as a substantial token of their good will, a valuable gold chain, which had been purchased for this purpose.

The surprise was complete, and the embarrassment of Mr. Bates prevented him for a moment from saying anything in reply; but he soon recovered himself, and in a few well timed remarks expressed his pleasure and surprise at the reception of the chain, and hoped that the good feeling which animated this presentation would continue through the future. He proposed to continue it for the evening by an adjournment to Perkins', which was unanimously agreed to, where a champagne supper concluded this very enjoyable occasion.—*Erie, Pa., Dispatch.*

THE TELEGRAPH.

Progress of the Atlantic and Pacific Co.

THE Atlantic and Pacific Telegraph Company has completed its third wire from New York to Buffalo, N. Y., and is building a fourth wire from New York to Albany, which will be completed by the first of November. The third wire will soon be continued west of Buffalo.

We are pleased to hear that the business of this line is increasing, and the condition of the wires constantly improving.

Confusion Arising from Similarity of Names.

THE recent announcement of the consolidation of the Western Union and Atlantic and Pacific States lines, in California, has caused many persons to suppose, from the similarity of names, that the Atlantic and Pacific Company of this city has been consolidated. The A. & P. Co. have no connection with the A. & P. States Co., and is now, as before, an independent competing company.

The Atlantic and Pacific Company and the Pacific and Atlantic Company are often confounded, although they are entirely separate and independent companies, and their lines occupy different routes.

The Mississippi Valley National Tel. Co.

AN Associated Press despatch from St. Louis, of last Wednesday, states that about a week ago obligations of the Mississippi Valley Telegraph Company went to protest, to the amount of \$150,000, the endorsers being James Duncan, E. W. Warne, J. S. Cavender and E. W. Rowse. In consequence of this, efforts are now being made to sell the property of the company. It is said that the Western Union Telegraph Company have offered \$100,000 cash, and the Pacific and Atlantic Telegraph Company \$225,000 in stock.

A meeting of the stockholders will be held here on Thursday next, to take action in the matter.

Fire Alarm and Police Telegraph in Richmond.

THE propriety of erecting a fire alarm and police telegraph in Richmond has been discussed on various occasions lately by the press and citizens here. Mr. A. H. Evans, of Washington, an agent for contractors in this department of human enterprise, is at present in the city. He, in company with Col. Egbert, chief of police, proceeded this morning to make a topographical examination of the city, to ascertain its needs and requirements in this respect; also, where such instruments may be placed to be of most practical benefit.

The examination will be concluded, doubtless, in time for a report to be made to the committee of the City Council this evening. Should his suggestions meet with favor, he will submit proposals to complete the needed telegraph at the lowest possible rates.—*Daily State Journal, 9th.*

New Tariff System.

THE new system of tariff which has been in preparation for the Western Union lines, and which was fully described in THE TELEGRAPHER some months since, will go into operation October 1st.

A Telegraph Line Man Killed.

IN St. Louis, on Saturday, the 18th inst., while John Matthews, a telegraph repairer, was taking down some wire from a pole at the elevator, the pole fell, precipitating Matthews to the ground, killing him instantly.

TELEGRAPHIC BREVITIES.

THERE are seventeen telegraph stations in Rhode Island.

The Western Union Telegraph Company opened a new line to Lewes, Delaware, on the 20th inst., connecting with their line on the Delaware Railroad, at Wilmington. This line will be useful to the shipping interests in reporting vessels at the Delaware Breakwater.

The repeating office at Ogden, Utah, has been removed to Corinne, Utah.

Election in Albany, N. Y., District.

At the annual election of officers of the Albany, N. Y., District, National Telegraphic Union, Mr. Fred. H. Lawrence was chosen District Director; Mr. Geo. C. Wood, of Fort Plain, First Vice-Director, Mr. F. D. Adams, of Troy, N. Y., second Vice-Director, Mr. Chas. E. Clark, District Secretary, John Gay, District Treasurer, Mr. Fred. H. Lawrence, Delegate to Annual Convention, and Mr. A. L. Whipple, alternate.

The American Fire Alarm Telegraph.

WE call attention to the advertisement of GAMEWELL & Co., the proprietors of the American Fire Alarm Telegraph. This system has proved its superiority over all other systems by many years' use in the larger cities of the country, and is now being introduced in several important localities, in addition to those where it is already in operation. It is unquestionably the most complete and effective Fire Alarm Telegraph system in the world, and well deserves the popularity and success which has attended its introduction. We heartily commend it to all municipalities which have in contemplation the establishment of this valuable adjunct to the fire department. It has become indispensable in all places which have outgrown the limits of a village, and has been the means of preventing the destruction of much valuable property. For the smaller cities and towns GAMEWELL & Co. have an automatic system, which is very effective and very economically maintained.

Justice to a Cotemporary.

IN the last number of THE TELEGRAPHER we published a communication from Mr. WESTBROOK, of Harrisburg, Pa., which was sent to our official cotemporary, in reply to some remarks in that paper upon his patent for automatic telegraphy, which not appearing in the *Journal*, as expected, was sent to us with the request that we would publish it. After it was printed in this paper it appeared in the *Journal of the Telegraph* of September 16th, the publication of which was delayed two or three days beyond the date of the issue. We have no desire to do injustice to the Editor of that paper, and therefore make this explanation. Had we known that its insertion in the *Journal* was intended of course we would not have published it, at least in the shape in which it appeared.

Packard's Monthly.

THE October number of this popular magazine has appeared promptly, and well sustains the excellent reputation which Mr. PACKARD has obtained for it. Several new contributors have articles in the present number, while old favorites justify their claims for appreciation. In his specialty Mr. PACKARD has no competitor, and it is satisfactory to know that the success of the *Monthly* is equal to its deserts.

Highly Commendable.

THE telegraphers of Albany, N. Y., who are never wanting in any good work, have contributed forty-five dollars for the relief of the sufferers by the Avondale Mine disaster.

This action of the Albany telegraphers is exceedingly creditable to them, and is a good example for the telegraphic fraternity employed elsewhere.

New Patents.

For the week ending Sept. 21, and each bearing that date.

No. 95,013.—TELEGRAPH APPARATUS. David Flanery, New Orleans, La.

I claim the combination, in a portable box or case, C. D., of a local battery, relay, magnet, key and sounder, when arranged for enclosing the same, and to form a writing-case when open, substantially as specified.

No. 95,014.—SELF-CLOSING TELEGRAPH KEY. Joseph J. B. Frey, New York, N. Y.

I claim the key A, constructed as described, with the convolute spring B, in combination with the platina point b, and insulated point a, all arranged and operating as described for the purpose specified.

BORN.

WHITE.—At Mason's, Tenn., Sept. 14, to Mr. WM. N. WHITE, of the Western Union Telegraph office, a son.

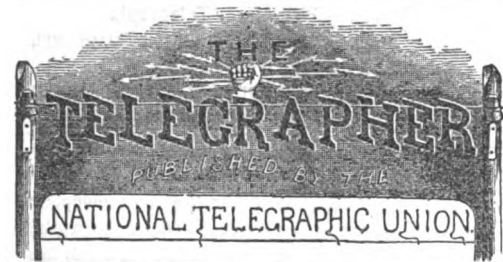
WHITNEY.—On Saturday, 18th ult., to Capt. LEONARD WHITNEY, cashier of the W. U. Telegraph office, Washington, D. C., a son.

MARRIED.

DENNINGTON—WILLSEY.—At the Second Reformed Dutch Church, Schenectady, N. Y., Sept. 8th, by the Rev. DENNIS WORTMAN, Mr. HARRY W. DENNINGTON, Manager of the Western Union Office at Schenectady, to Miss FANNY M. WILLSEY, of that city.

DIED.

BOHANNA.—At Edgefield Junction, Tenn., Sept. 12, Mr. JOHN BOHANNA, formerly of Mobile, Ala.



SATURDAY, SEPTEMBER 25, 1869.

J. N. ASHLEY,.....Publisher and Editor.

OFFICERS OF THE
NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG...Box 248 P. O., Washington, D. C.

Vice-President. W. P. MERRILL...W. U. Tel. O., Portland, Me.

Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.

Recording Sec...W. H. H. CLARK...Box 2839, Philadelphia, Pa.

Corres. Sec....F. L. POPE.....Box 6010 P. O., N. Y.

ANNUAL REPORT OF THE PRESIDENT OF THE
WESTERN UNION TELEGRAPH CO.

We have received a copy of the Annual Report of Mr. WM. ORTON, President of the Western Union Telegraph Company, to the Stockholders, submitted to and approved by the Board of Directors at their meeting, July 13th, which has just been issued in pamphlet form.

This report being the first made in compliance with the new By-Laws of the Company, which prescribes that the President shall make a report to the Stockholders at their annual meeting, showing the condition of the affairs of the Company, etc., is largely retrospective in its character. It is a valuable document, and worthy the careful attention and study not only of the Stockholders of that Company but also of the projectors and managers of other telegraphic enterprises in this country.

While we cannot concur in all the statements and conclusions of Mr. ORTON, which are of course favorable to the Company and the telegraphic policy which he represents, yet we consider his report of great interest and importance, and worthy of more attention and space than has heretofore been accorded to it, even in the official organ of the Company.

The report opens with a review of the early history and struggles of the telegraph for recognition and support, and the difficulties and obstacles which attended its introduction in this country. Mr. ORTON then gives a detailed history of the origin and progress of the Western Union Company, with the numerous consolidations which resulted in making it what it now is. This history is very interesting, and we may hereafter reprint it, but must omit it for want of space this week.

We quote from the report in reference to

THE EXTENT OF THE WESTERN UNION LINES.

The territory now occupied by the lines of this Company embraces almost the entire civilized portion of the continent of North America. On the eastern coast our lines extend from Plaster Cove, on the Gulf of the St. Lawrence, to Indianola, on the Gulf of Mexico; and on the western coast from Los Angeles, California, to the fisheries on the Kishyox river, eight hundred miles north of New Westminster, British Columbia. They reach across the continent, from the Atlantic to the Pacific Ocean, and embrace every State and Territory in the Union but Minnesota, New Mexico and Arizona, and include the British Provinces of Nova Scotia and New Brunswick. Our lines also have an exclusive connection with those in Newfoundland, Canada, Minnesota, Wisconsin and New Mexico, and with the Atlantic and Cuba Cables.

The consolidations which have resulted in the Western Union system mark a new and important era in the progress of the telegraph in this country. By them the means of communication at all points have been greatly increased, while between all the large cities and many of the less important a system of direct circuits has been established, which affords facilities for rapid and reliable communication at all times. Instead of several repetitions of messages between the great commercial centres of the country, as formerly, transmission is now in most cases direct and instantaneous; and the operation of our system over the vast territory covered by our lines is fast assuming the certainty and uniformity of mechanism. Not only, however, have the public gained in time and in greatly increased facilities by these consolidations, but they have received also the benefit of large reductions in the rates for both public and private despatches.

The details in reference to the reorganization and re-

construction of lines, necessitated by the present organization of the Western Union system, are very full and minute, but we can find room only for the summary for the last three years:

Statement showing the number of miles of Poles and Wire Constructed and Reconstructed from July 1, 1866, to July 1, 1869.

	CONSTRUCT'D.		RECONSTRUCTED.	
	Miles of Poles.	Miles of Wire.	Miles of Poles.	Miles of Wire.
From July 1, 1866, to December 31, 1866.....	1,624	2,748	3,255	6,490
From December 31, 1866, to December 31, 1867.....	2,518	4,443	2,356	4,751
From December 31, 1867, to December 31, 1868.....	2,202	6,036	2,032	4,604
From December 31, 1868, to July 1, 1869.....	1,624	4,900	430	1,795
Total.....	7,968	18,127	8,073	17,580

The Western Union Telegraph Company has—
3,469 Stations.
52,099 miles of line.
104,584 " " wire.
103 " " submarine cables.
2,607 Instruments for reading by sound.
1,334 Recording instruments.
3,807 Relay magnets.
4,180 Transmitting keys.
132 Repeaters.
19 Printing instruments.
710 Switch boards.

Not the least interesting portion of the report is that in relation to the financial statistics of the Company. The increase of its capital from \$360,000, at its organization, to the present time, when it amounts to \$40,568,300, on which dividends are paid, is traced, and the items on which each increase was founded are given in detail. In addition to its capital the Company has a bonded debt of \$1,634,100 outstanding, of which \$89,500 is due in 1873, and \$4,544,600 in 1875.

The greater portion of the debt of the Company was incurred in the grand attempt to build a line on the Northwest coast and across Behring Straits, to connect with the Russian line at the mouth of the Amoor River, known as Collins' Overland Line to Europe, which was abandoned after the successful submergence and operation of the Atlantic Cable.

The Sinking Fund established by the Company to provide for the redemption of the bonds of the Company is credited with \$521,000.

At the annual meeting of the Stockholders, held July 8, 1868, the following By-Law was adopted:

"The Board of Directors may hire or purchase the lines, or purchase stock of any other telegraph company; but neither the capital stock nor the bonded debt of the Company shall be increased beyond the amount now authorized, except by the written consent of two thirds of the Directors, entered in the Secretary's record of proceedings of the Board, and by a vote of the Stockholders holding a majority of the capital stock, at an annual meeting, or at a special meeting called for that purpose."

A detailed statement of receipts, expenditures and profits, for the three years ending July 1st, 1869, are given, showing the gross receipts for that time to have been \$20,890,403.86; expenses \$12,874,971.79; and net profits \$8,065,432.06.

The reorganization of the tariff, which goes into operation October 1st, has occupied two years of time, and much study and labor have been devoted to this work. The plan adopted is an entirely new one, but was given in detail in THE TELEGRAPHER some months since. Mr. ORTON says:

The adoption of an air line tariff will, of necessity, greatly lessen many existing rates. Offices fifty miles apart geographically, but whose messages to each other must pass over a circuit of twice or thrice that distance, will have, so far as cost is concerned, all the advantages of a direct line. A large number of places will be thus benefited.

The adoption of the new system will make an average reduction of the present rates of about fifteen per cent. These reductions do not result from competition, but are made in spite of it. Were it not for competition we could reduce the rates still more.

These reductions will give us strength in two important respects. They will weaken the existing opposition, and discourage their efforts towards extensions, and tend to satisfy the public and lessen the possibilities of Governmental interference. This Company can control the telegraph business of the country, if it has the courage to reduce the rates to a point that will satisfy the public and make the existence of small competing lines impossible, and the patience to wait for an increase of dividends until the results of the policy has had time for development. For the present year, and perhaps for the next, our property is worth more on the payment of a four per cent. dividend than if it were made six, provided that the rates are popular, and the surplus revenues are judiciously expended in the construction of new lines and the reduction of the debt.

The relations between the Company and the press of

the United States are stated to be of the most satisfactory character.

The aggregate amount of news delivered to the newspapers of the United States by our lines during the past year was 369,503,630 words, for which we received \$885,509, being at the rate of two and three tenths mills per word.

This immense amount of matter was not transmitted to each paper separately, but, through a combination of wires only possible to a vast system such as ours, it was sent to a large number of places simultaneously, with only one transmission.

Direct wires convey news reports between New York and Chicago, Cincinnati, St. Louis, Washington, New Orleans, Plaster Cove and other important points.

Every press association in the United States receives its news by our lines—a conclusive proof that our performance of this service is satisfactory.

As, by the contract of the Company with the N. Y. Associated Press, every paper receiving its news from the N. Y. association is compelled to take not only its association news but its private reports by the Western Union lines, that fact can hardly be regarded as a conclusive proof of the satisfactory performance of the service. We do not say that the service is not satisfactory, but merely show the fallacy of the conclusion from the premises.

The report figures up in various ways the present value of the property of the Company, and much ingenuity is displayed in showing the real value to be greater than the present market price of the Company's stock, but we have not room to more than allude to this part of the document.

The most interesting part of this report to our readers will doubtless be that which especially refers to rival telegraph organizations, and we quote:

EXTENT OF RIVAL ORGANIZATIONS.

In estimating the future value of our property we should take into consideration the extent and importance of the various rival organizations which are competing with us, and the probable effect of future extensions of their lines upon our receipts and profits. The following statistics will show the comparative extent of the lines, wire and offices belonging to the Western Union Company, and those working in exclusive connection therewith, and of those of all the rival organizations:

Number of miles of line belonging to W. U. system,	66,263
" " wire " " " "	121,595
" " stations " " " "	4,692
Number of miles of line belonging to Rival Companies,	6,773
" " wire " " " "	9,100
" " stations " " " "	337

Thus it will be seen that, of the total number of miles of line in the United States and the British Provinces, the proportion belonging to all rival organizations is about ten per cent, and of wire and stations about seven per cent.

The increase of the lines of the Western Union Company by construction alone, during the past three years, exceeds by 1,195 miles the total amount of lines belonging to all the rival organizations in the United States and Canada; while the amount of wire erected by this Company during the same time is 9,000 miles more than that owned by all the rival companies combined.

The effect of these rival lines upon the business of this Company has not been seriously felt. While their operation has occasioned reductions in rates between many places, in some cases below a just and remunerative scale, still the number of their offices is so small in comparison to those belonging to this Company that the loss of all the business which they obtain is barely appreciable in our receipts. At some points where they have established themselves our earnings are greater than they were before the rival offices were opened. The increase is to be accounted for by the extension of our lines and the opening of new offices, and would unquestionably be larger were it not for the operation of competing lines. The fact is interesting and instructive, however, that most, if not all of the existing rival lines, although they compete with this Company at the chief commercial centres, where success could be obtained if it were possible anywhere, nevertheless operate at a loss, while the superior facilities of this Company enable it to do business at a profit. The greater reliability and more universal connections of our lines secure to them a vast majority of the business, even at competing points, while a considerable portion of the messages originating at various stations upon rival lines are necessarily given to us for transmission to such places as they do not reach. The best evidence of the comparative insignificance of these lines upon our business, however, is found in the large increase in the number of messages annually transmitted by this Company, which, during the year ending December 31, 1868, exceeded that of the previous year by 1,618,584.

Mr. ORTON goes at some length into the present condition of the competing lines, and finds them all very unsatisfactory to their stockholders. We have not space to print his statements in regard to the manner in which such enterprises are usually originated, but there is much truth in his criticisms of the practice of organizing companies to carry out contracts previously arranged.

The force of his argument is not impaired by the fact that the Western Union Company is in the main composed of an aggregation of lines built on precisely the system which he condemns, and which have resulted in the loss of their investment to most of the original stockholders. As the President of the United States Telegraph Company, Mr. ORTON had a good opportunity to obtain an inside view of the swindles which have ruined

so many promising telegraphic enterprises, and which were the cause of the failure of that Company. As Mr. ORTON was connected with that Company only long enough to accomplish its consolidation with the Western Union, we do not desire to be understood as charging him with a participation in the swindles referred to. On the contrary, we know that he had no part or lot in them, and was not aware of the actual history and situation of the Company until after he became its President.

In a previous part of the report he says:

In April, 1866, the lines of the United States Telegraph Company were consolidated with the Western Union. That Company was organized in 1863, and constructed a system of rival lines, embracing sixteen thousand miles of wire, and covering considerable portions of the territory occupied by the Western Union and American lines. The United States Company, however, under the most vigorous administration, with all its lines new, and worked to their utmost capacity, was unable to meet its current expenses—the net loss, during the last year of its operation, amounting to an average of more than ten thousand dollars per month.

The facts in regard to the United States Company have been very fully discussed heretofore in THE TELEGRAPHER, and the error of Mr. ORTON's assumption that its failure was on account of the impossibility of meeting current expenses by current business, if the lines had been honestly and properly constructed, and the Company had not been burdened with unprofitable and wasteful contracts, has been shown. We only refer to this matter now because it is again brought forward in this official manner, as a conclusive demonstration of the impossibility of competing lines being made self-sustaining.

The impossibility of working any of the "Fast" or Automatic systems of Telegraphy is argued at length, but we are not prepared to discuss this point at present.

The arguments against a Governmental interference with the Telegraph are mainly a restatement of the facts and figures contained in the pamphlet issued by the Company in relation to the Postal Telegraph during the last session of Congress, and have been printed in our columns during the protracted discussion of the subject. On this point we are fully in accord with Mr. ORTON, and hope the time is far distant when the Telegraph shall be paralyzed by Government control in this country.

The policy of the Company, which appears to us to be in the main wise, is thus stated:

The policy which the Company has pursued during the past three years has been to pay only moderate dividends, and to devote the remainder of the net earnings to the reduction of the debt and the improvement and extension of the lines. It has not sought the appreciation of the market value of the stock by the payment of large dividends, believing that the true interests of the stockholders require that a considerable portion of the current revenue should be expended in increasing the facilities for doing business, in order to be able to cope satisfactorily with the constantly increasing traffic. The property has not been managed as a leased estate, from which the largest amount of revenue was to be obtained in the shortest possible time, but as a valuable permanent investment, to be improved and enlarged with a just regard to its future value as well as its present income. For the same reason the tariffs have not been made with the view to obtain the greatest immediate returns, but the aim of the Company has been to give the use of the wires to the public on the lowest terms consistent with a proper self-support, and the just return which capital and skill are entitled to receive.

We have sought, by the enlargement of our facilities, the employment of the best skilled labor, and a constant but gradual reduction of tolls, to transmit telegraphic correspondence better and cheaper than it can be done by any other organization, and thus, through these inducements, to secure and permanently control the greater portion of the telegraphic business of the country.

THE POLICY OF THE FUTURE

will, it is stated, be the extension of the facilities of the Company as rapidly as the demands of the increasing traffic shall require them.

The construction of new lines must necessarily go on so long as the Company aims to control the telegraph business of the country; for if we fail to supply telegraphic facilities as they are demanded they will be furnished by others, and this might result in the creation of a system ultimately rivalling our own. Our true policy, therefore, is to extend our lines as rapidly as they are required; and, while we may regret that a larger share of the profits cannot be divided now, we shall soon perceive the wisdom of the course we are pursuing in the greatly increased value of the property by such extensions.

We have thus given, as fully as our space will permit, the leading and most interesting features of this report. It is, of course, Mr. ORTON's business to make his report as good and complete an argument for the maintenance of the Western Union monopoly as possible, and this object has been kept in view throughout. We need not say that in this we do not agree with him. We believe com-

petition in the telegraph business of the country is desirable, and is demanded by the people, but we do not believe that successful competition can be established under the present system of constructing lines at nominally exorbitant rates paid in stock, thus burdening the companies at the start with an amount of nominal capital, exceeding in proportion that of the Western Union Co.

Mr. ORTON's report is a most effective and unanswerable argument for the immediate consolidation of existing competing companies, upon a fair and reasonable basis, and the extension of the system upon a different plan from that heretofore pursued. With such an organization, honestly conducted, the competition would prove far more formidable and effective than it has been since the consolidation of the United States Company with the Western Union. We hope the managers of the competing lines will learn wisdom, even from the great monopoly. Let future extensions be built for cash instead of stock, and for the interests of the public and the stockholders instead of the contractors; and the lesson inculcated by the costly experience of the Western Union Company will prove valuable, not only to the managers of that Company but to its competitors as well.

AMERICAN FIRE ALARM AND POLICE TELEGRAPH, GAMEWELL & CO., Proprietors, 104 Centre Street, N. Y.

This system of Fire Alarm Telegraph, with a central office, or upon the

AUTOMATIC PLAN,

is now in operation in the following cities, to which reference is made for evidence of its great superiority and value, and UNIFORM reliability:

BOSTON,	PORTLAND,
CHICAGO,	ST. JOHN, N. B.,
PHILADELPHIA,	HARTFORD,
CINCINNATI,	TROY,
ST. LOUIS,	NEW HAVEN,
BUFFALO,	ROCHESTER,
BALTIMORE,	SPRINGFIELD,
MOBILE,	TOLEDO,
NEW ORLEANS,	ALBANY,
PITTSBURG,	COLUMBUS,
LOUISVILLE,	LAWRENCE,
ALLEGHENY,	MILWAUKEE,
MONTREAL,	SAN FRANCISCO,
QUEBEC,	CAMBRIDGE,
	WASHINGTON, D. C.

THE DISTINCTIVE FEATURES OF THE AMERICAN FIRE ALARM TELEGRAPH

are a Combination of Circuits, the Automatic Signal Boxes, Electro-Mechanical Bell and Gong Strikers.

THE AMERICAN FIRE ALARM AND POLICE TELEGRAPH is covered by some twenty patents. Very early after its introduction into Boston, GAMEWELL & Co. purchased the original patents of FARMER & CHANNING, and during the past fifteen years have spared no expense or pains to improve and perfect this system.

Any information desired in regard to the above system will be cheerfully and promptly furnished upon application at the office.

A pamphlet, setting forth more fully its advantages and superiority, has been printed, and will be supplied to Municipal Authorities and others interested in Fire Alarm and Police Telegraphy, upon application as above.

SITUATION WANTED.

The Subscriber having resigned from the Western Union (Washington, D. C.) Telegraph Office, would like to obtain a Situation as OPERATOR. He is a "Sound" Morse operator, of ten years' experience, and is of good habits and attentive to business.

Address, till October 1st,

A. J. LOMBARD,
Baltimore, Md.

L. G. TILLOTSON & CO.

No. 11 DEY STREET, N. Y.

Manufacturers of

Telegraph Instruments and Supplies

OF EVERY DESCRIPTION.

Glass Insulators, Brackets, &c.

Zincs, Tumblers, Porous Cups, and all kinds of Battery Material.

Hill's Patent Galvanic Battery.

Ogden's Improved Carbons, with the Immersed Platina Connection.

Agents for pure Nitric and Sulphuric Acids, manufactured by the Lodi Chemical Works.

" C. F. Varley's Patent Paraffine Insulator.

" Gutta-Percha covered Wire and Cables American Manufacture.

" the best Manufacture of Plain and Galvanized Iron Wire.

" of American Compound Telegraph Wire Co.

" for sale of

POPE'S MODERN PRACTICE

OF

THE ELECTRIC TELEGRAPH,

Publishers of Prof. J. E. SMITH'S

MANUAL OF TELEGRAPHY.

BLISS, TILLOTSON & CO.,

171 SOUTH CLARK ST.,

CHICAGO, ILL.,

MANUFACTURERS AND DEALERS IN

Telegraph Machinery and Supplies.

Instruments repaired at short notice.

L. G. TILLOTSON & Co.,
New York.

GEO. H. BLISS,
Chicago.

AMERICAN COMPOUND TELEGRAPH LINE WIRE.

Requires from one half to two thirds less poles than Iron Wire.

Economy of time and money in construction and reconstruction.

Durability greatly exceeds best quality of Galvanized Iron Wire.

Decreased liability to breakage from sleet and extreme cold weather.

Great improvement in the working of Lines in any condition of weather, this resulting directly from superior conductivity and insulation.

The above claims have been fully and fairly demonstrated, and that relating to sleet more especially, during the past winter.

Numerous and severe sleet storms, in sections where the Compound Wire is in use, have proved beyond question its great superiority.

One of the most severe of these storms (of the effects of which a very satisfactory report has been received by the company), occurred about the middle of December, in the Sierra Nevada mountains, and during which a No. 9 iron wire, on the lines of the ATLANTIC AND PACIFIC STATES TELEGRAPH COMPANY, was broken eighteen times within the space of one mile, while a COMPOUND WIRE by its side remained uninjured.

Other testimonials of like character have been received, all of which are conclusive that the merits of the COMPOUND WIRE have not been over-estimated.

Address—

American Compound Telegraph Wire Co.,

ALANSON CARY, Treasurer,

No. 234 West 29th St.,

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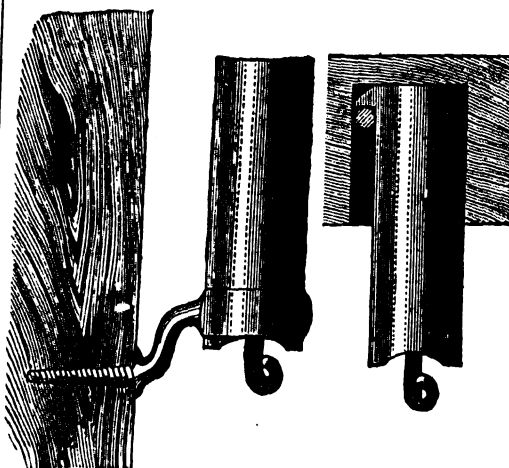
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can be shown for their failure to comply with the rules. But one new District has been organized during the past year, at Ringtown, Pa., Dec. 3d, 1868, with seven members, under the name of Catawissa R. R. District. For further and full information regarding the financial standing of the several Districts, I would refer you to the Treasurer's Report.

It was deemed necessary to call but one meeting of the Executive Committee during the year. That meeting was held at the Western Hotel, New York, January 17, all the members being present except the Vice-President (Mr. Merrill). At that time the Committee authorized the President to prepare suitable charters, and forward them to the several Districts, numbered according to date of organization, as follows: New York, No. 1; Boston, Mass., No. 2; Maine, No. 3; Washington, D. C., No. 4; Albany, N. Y., No. 5; Detroit, Mich., No. 6; Chicago, Ill., No. 7; California, No. 8; Peoria, No. 9; Corry, Pa., No. 10; Meadville, Pa., No. 11; West Virginia, No. 12, and Catawissa R. R., No. 13. This order has been complied with, and acknowledgments received from all but Boston, No. 2, Detroit, No. 6, Chicago, No. 7, and Meadville, No. 11. Philadelphia, Baltimore and Harrisburg Districts were ordered to be disbanded. Intimations having been received that the rival insurance bureau was favorably disposed to unite the two bureaus on an equitable basis, Mr. F. L. Pope was appointed to confer with the committee of that association, and receive any proposition they might deem proper to offer. No report has been received from him on the subject, and I would recommend that the Executive Committee be fully empowered to confer with the proper officers, and if they should consider it expedient, make arrangements, either for the consolidation of the two bureaus, or take such other action as they shall deem requisite.

Several applications for relief were received and acted upon during the year. As they were somewhat informal, such cases having been transferred to the control of the Districts, I deem it proper to lay before you the circumstances and particulars of each case.

Sept. 30th, 1868, application from Mr. S. C. Rice, D. D., Albany, N. Y., approved by Council, asking sick relief for Richard Gay, Jr., taken sick before the Convention met. Mr. Gay had received 24 dollars, all due him from the District under the old Constitution, and the payment of one hundred dollars, funeral expenses, was requested, he having died Sept. 29th. After consideration, the Executive Committee decided to pay one hundred dollars in full of all demands, which amount was accepted by Mr. Gay's family.

Feb. 13th, 1869—application from New York District, properly endorsed, asking for eight weeks' relief, previous to August 1st, 1868, for Mr. Van Duzen, which was approved by the Executive Committee, and the Treasurer was directed to forward 48 dollars.

June 5th, 1869—The Maine District, in settling their account of dues, previous to July 31st, 1868, deducted 33 dollars, for five and a half weeks' sick relief, for Dennis Harman, Jr., accompanied by physician's certificate that he was sick from May 15th to July 1st, 1868. I directed the Treasurer to allow the deduction, after receiving the proper approval of the District officers.

This question of relief compels me to speak of another case, to which I desire to call your special and immediate attention. It being a somewhat delicate question, affecting the action of my immediate predecessor in certain financial transactions during his official term, I shall confine myself to the presentation of the facts, and my action in connection therewith. At the Sixth Annual Convention the Treasurer informally reported that certain moneys which he had forwarded to the President (Mr. Churchill), upon his warrant, to be used by him in payment for printing material, and for sick relief due Mr. Winter, a member of the Boston District, had never reached the parties. The whole subject was finally referred by the Convention to the Executive Committee for investigation, and accordingly, after a personal interview with Mr. Churchill, and writing to him several times, without receiving any satisfactory explanation, being fully satisfied that Mr. Winter had never received the amount properly due him, the Treasurer was directed to send him 150 dollars. This increased the amount due from Mr. Churchill to nearly 300 dollars. At the meeting of the Executive Committee, held in New York, Mr. Whipple was appointed, and authorized to use all necessary means to secure the amounts due the Union. I therefore refer you to the Treasurer's Report for further information, with the hope that some measures may be adopted whereby we may obtain our just dues.

By the above record it will be seen that, during the past year, \$331 has been paid to sick and needy telegraphers. I cannot allow this opportunity to pass without indulging in a few remarks, addressed more particularly to the members of the profession who, from the time of our organization, have thought proper to sneer at our efforts, withholding their aid and assistance, and, seemingly, doing all in their power to retard our progress

towards unity and success. I regret to say some of our own members may be classed among these dissatisfied spirits, endeavoring to cast ridicule upon our honest labors, repeating the old insinuation, "What good has your (or our) Union ever done?" A fitting answer can be found in the fact that, during the weakest year of our existence, so large an amount has been dispensed in fulfilling our obligations; and I further desire to call their particular attention to the following statement: During the first year of the Union twenty four dollars was paid for sick relief; the second year, \$151.75 for sick relief and funeral expenses; the third year, \$335 for sick relief, \$270.75 for funeral expenses, and \$245 to members unable to secure employment, and from Sept. 1st, 1866, to date, the following amounts have been paid: For sick relief, \$1,689; funeral expenses, \$577.63; to members out of employment, \$116.42; making a total of \$4,141.58.

The above figures are effective arguments for the benefits of the Union, and all must acknowledge that the few noble members who have remained faithful and steadfast have ample reasons for congratulation, and should feel encouraged, knowing that their feeble efforts have been instrumental in affording great good to those in distress, relieving, and for a time placing their families in comfortable circumstances. The day must, and will yet come, when telegraphers will deeply regret their failure to uphold and strengthen this Association; for, by refusing their assistance towards elevating the standard of our profession to the rank where it properly belongs, they have lost for a considerable period, if not forever, the power to demand and receive the proper degree of esteem, confidence and justice so necessary for their welfare.

Scarcely one month had elapsed after the adjournment of the last Convention, Oct. 26th, 1868, when Mr. J. W. Duxbury tendered his resignation as Recording Secretary, stating that it would be impossible for him to attend to the duties of the office; his resignation, together with the names of T. A. Davin and H. W. Wheeler, of Boston, and W. H. H. Clark, of New York, as candidates for the position, were submitted to the delegates, in accordance with the requirements of the Constitution, when Mr. W. H. Clark, having received a majority of all the votes cast, was declared elected, and accepted the position Dec. 14th.

I desire to tender my sincere thanks to the members of the Executive Committee for their promptness, and especially for their valuable aid and advice.

In conclusion, allow me to urge again the importance and necessity of perpetuating our Union in some form. If it should be deemed impossible to adopt a new foundation that will improve our condition—renewing, as of old, the interest and energies of the fraternity, and creating a complete reorganization—it would be advisable to consolidate all legislative power now held and exercised by the Convention of Delegates under one general head, as an Executive Committee, or in some other suitable form, centrally located, dispensing entirely with the Conventions, reducing the dues to the lowest limit, placing supreme control, in fact, in the hands of the Executive Committee, including the management of THE TELEGRAPHER.

With the above imperfectly expressed views and suggestions, and a conscientiousness that I have endeavored to fulfil my duties to the best of my feeble ability and knowledge—hoping that all our proceedings may be characterized by a feeling of brotherly love and a successful termination, this report is respectfully submitted.

W. H. YOUNG, President.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion.

No notice will be taken of anonymous communications.

Westbrook's Automatic Telegraph Instrument.

TO THE EDITOR OF THE TELEGRAPHER.

In explanation of my course in sending to THE TELEGRAPHER for publication a copy of a communication written for the *Journal of the Telegraph*, I beg leave to state that it was forwarded to the Editor of the *Journal* in ample time for insertion in the issue of Sept. 1st. It is usual, I believe, for Editors to acknowledge the receipt of accepted communications, when from any cause their insertion is delayed. No notice was taken of mine, and I therefore concluded it had found its way to the waste basket.

The course of the *Journal* in this matter has not been such as to inspire confidence in its fairness. Some time during the summer of 1868 I exhibited to the Editor, as also to other parties, a working model of my transmitter. The Editor expressed a favorable opinion of it, proposed

noticing it in the *Journal*, to which I made no objection. The notice did not appear; but in the issue of Nov. 2, 1868, the following "notice" did:

"One of the simplest modes of automatic telegraph writing was proposed by Prof. Morse during the lifetime of Alfred Vail, which was simply the use of the indented paper of the Morse register, used to elevate a lever as the letters passed beneath it. A description of it appears in one of Mr. Morse's papers, and might easily and inexpensively be brought into use."

In the *Journal* of December 1, 1868, appears a wood-cut representing Prof. Morse's type and port-rule plan, without description or comment; but it exhibited a lever as being elevated as the type passed beneath it. These references were published while my application was pending, and were those which the *Journal* took "such special pains to point out." They were fully considered by the Patent Office, and my claim passed over them. Hence the attack of the *Journal* of August 16, 1869, upon the validity of my patent, and upon the Patent Office for "accepting fees for a device" which that paper had decided belonged to Prof. Morse.

It is noticeable that when my method of automatic telegraphy was assumed to have been "proposed" by Prof. Morse, the *Journal* describes it as "one of the simplest modes of automatic telegraph writing, and might be easily and inexpensively brought into use;" but when viewed as my invention, and brought out in a practical form (which was never done before), it becomes a very different affair, and "not susceptible of profitable employment!"

As to Mr. Edison's plan, published by M. F. Adams in the *Journal* of June 1, 1868, it did not enter as a reference in my case. I had filed a caveat describing my method some time previous to that date, and had a working model in operation when that communication appeared.

The extraordinary efforts of the *Journal* to defeat my application for a patent, and failing in that, the attempt to depreciate the value of my automatic method, disclose something more than sympathetic "regrets" for "our good friend,"

C. WESTBROOK.

That Obnoxious Order.—Information Wanted.

WASHINGTON, D. C., Sept. 13th.

TO THE EDITOR OF THE TELEGRAPHER.

WE were not a little surprised, the other morning, on entering the office, to find a book spread open before us, containing all the names of the employees in the office in rotation. At first we did not know what it was intended for, but soon learned that it was intended that every employee, on entering the office for duty, should register the time of arrival opposite his name.

We are not positive about the object of this registering, but, if it is intended to ascertain how much time the company loses by employees coming on duty late, why not make us register the time of our departure from duty, and thus ascertain how much time the employees lose by working over hours, in return for being off duty?

If the company intend to make us pay for the time they lose by our coming on duty late, of course they could not object to paying us for the time we lose by working after our regular hours, or being pressed on duty. And, by registering the time of going off duty as well as coming on duty, it would be an easy matter to tell which loses the most time, the company or the employee.

As a matter of course, every one complies with the rule (with one exception), but not without a little grumbling.

Now, THE TELEGRAPHER is the organ of the operators, and we, as telegraph employees, ask for information on this subject. Can you give it to us through the columns of our paper, or will some one who is more familiar with this "order" or rule inform us what it means, so that we may know what to expect?

We fear the company is a little hard up, from the fact that some time ago there was an order issued to the effect that the company could not afford to pay for "soap and towels." If this be the case, they may want us to pay for lost time. We await a reply.

Yours, in suspense,
T. B. R. AND OTHER EMPLOYEES.

Reply to Several Victims.

NEW YORK, Sept. 29th.

TO THE EDITOR OF THE TELEGRAPHER.

THE communication in your paper of the 18th, over the signature of "Several Victims," does me great injustice, and I therefore ask space to reply thereto, and make an exculpatory statement of facts.

In the first place I have been sick, and my presence in this city is sufficient evidence that I have not gone to St. Pierre as a French Cable operator, as stated in THE TELEGRAPHER.

As regards the statement of "Several Victims," that I intentionally defrauded them, or anybody, out of either money borrowed, or labor rendered, at my request, it is entirely false. The fact is that I was indebted to but one person in the Western Union office in this city for borrowed money, and he disclaims having inspired, or having anything to do with the publication referred to. I was indebted to three of my associates for labor performed at my request, but two of them were paid for their work by the cashier, leaving only the person who originated the communication my creditor, and he only for the sum of three dollars, which it was and is my intention to repay as soon as possible.

I regret that even a single telegraphic brother should have taken the course he has to obtain satisfaction for so paltry an offence, if offence it was. I will not characterize his action as I feel it deserves to be characterized. His own reflections must be to him a sufficient punishment for his hasty and cruel conduct.

My reputation is dear to me as to every man who values the good opinion of his fellows, and I therefore take this method of vindicating it before my brother telegraphers.

The communication referred to was calculated to injure not only my feelings as a man but my prospects of obtaining employment as a telegrapher, and must, in any proper view of the facts, as I have truthfully presented them, be regarded as a great outrage.

JOHN F. McHUGH.

Washington Fire Alarm Telegraph.

WASHINGTON, D. C., Sept. 19th.

TO THE EDITOR OF THE TELEGRAPHER.

MR. J. H. LARCOMBE, Supt., has submitted to the Mayor and Board of Aldermen, and City Council, his annual report of the operations of the fire alarm telegraph for the year ending June 30, 1869. He calls the attention of the city government to the rapid extension of the city limits, and recommends the erection of six additional boxes in different sections of the city, and says that more than these might be erected to advantage. The law, as it now stands, provides for the appointment of one superintendent and two operators. No city in the Union, having a fire alarm telegraph, has less than three operators, and many four, and in addition to these they have a man for repairs.

In most of the cities the salaries paid are more liberal than in Washington, being respectively—for superintendent, \$2,000; operators, \$1,500; and repairman, \$800 to \$1,000; and this is about the compensation paid to persons occupying corresponding positions on commercial telegraph lines.

In conclusion, Mr. L. bears testimony to the efficiency and faithfulness of the operators, who have cordially and earnestly assisted him in every emergency.

A bill was introduced, and passed in the Board of Common Council, on last Thursday evening, Sept. 16th, which provides for the establishment of a fire alarm and police telegraph line to the Washington Asylum. Also, a bill which provides for the appointment of an additional fire alarm telegraph operator, to be paid same salary as present operators, but on motion the bill was postponed until next Monday evening.

The letter of the Southern ladies to Mr. Peabody, containing important suggestions relative to a portion of his educational gift to the South, is now being circulated for the signature of 10,000 Southern women. The letter recommends that a portion of the Peabody gift be devoted to the establishment of an institution whose whole design should be to open new fields of labor for women.

Among the employments suggested is one of learning the ladies telegraphing. SPRING.

TO CORRESPONDENTS.

BIQUE.—MR. POPE's excellent work, *Modern Practice of the Electric Telegraph*, will give you the information desired in regard to Printing Telegraph Instruments.

Information Desired.

A FORMER operator on the line of the Hornellsville and Buffalo Division of the New York and Erie road, at "Si," would be pleased to hear from that line, through THE TELEGRAPHER. Who is Division Train Despatcher, and who are operating the line now?

THE observatory of Dartmouth College is to be connected with the outside world by telegraph. The wire is a gift, and will be put up and in running order soon. The primary use of this connection will be to determine the longitude of the observatory, as it can be done in this way much better than in any other manner.

PERSONALS.

MR. GEO. W. SNYDER, printing operator, has been transferred from the Philadelphia, Pa., to the Boston, Mass., Western Union office.

MR. WM. DYER, operator in the Philadelphia Western Union office, has been transferred to the Washington, D. C., office.

MR. F. O. TAFT, formerly of the Pontiac, Michigan, office, has taken the office at Owasso, Michigan.

MR. LEVI M. LEVY, after ten years of service with the Western Union Company, has resigned his situation as operator in the Philadelphia office, and accepted a situation as agent and operator on the Kansas Pacific Railroad.

The present address of Mr. CHARLES LITHGOW, who spent the summer in Europe, is very much desired. Send the same to the editor of this paper.

MR. J. C. BARRETT and Mr. E. W. GIBBONS, printing operators in Western Union office, Boston, Mass., have been relieved.

MR. CHARLES B. NOYES, printing operator, has been transferred from the New York to the Boston Western Union office.

MR. FRED INGRAHAM, printing operator at 145 Broadway, has been retired.

MR. LOGUE, formerly of Pittsburg, Pa.; MR. WOOD, formerly with the Franklin Telegraph Company, and MR. R. DEAKERS, formerly of the Western Union Twenty-seventh street office, have recently received appointments in the 145 Broadway (Western Union) office.

MR. GEORGE H. HALL has taken a situation in the Western Union office, at No. 21 Wall street, this city.

MR. M. L. HELLINGS, operator at the Baltimore & Ohio Depot office, Washington, D. C., who has been absent in Europe for the past month, has returned to duty, much pleased with his trip.

MISS E. CARRIE COOK, of the Fifteenth street W. U. office, Washington, D. C., who has been absent on leave for the past two months, has returned and resumed duty.

MR. B. M. DAMON is freight and passenger agent and operator for the Jackson, Lansing and Saginaw Railroad, at Chesaning, Michigan.

MR. S. B. CURTIS, who has been for several years past the manager of Bridgeport (Conn.) Western Union office, has resigned.

MR. EDWARD B. BEARDSLEY, of Boston, Mass., has been appointed manager of the Bridgeport (Conn.) Western Union office.

THE TELEGRAPH.

(By Atlantic Cable.)

Another Cable Projected.

LONDON, Sept. 25th.—A new line of telegraph cable, to be laid between Ireland and Nova Scotia, is projected.

Telegraph Consolidation.

THE Mississippi Valley National Telegraph Company has sold its lines to the Pacific and Atlantic Telegraph Company for \$260,000 in stock.

TELEGRAPHIC BREVITIES.

THE telegraph wire is being put up from South Vernon, Vermont, to Keene, N. H., by way of Winchester, so that the Ashuelot valley will soon have a telegraph.

The Franklin Telegraph Company has extended its lines to New Britain and Middletown, Conn.

A despatch from San Francisco, California, of September 26, states that natives at Plover Bay had plundered and destroyed buildings belonging to the Western Union Telegraph Company.

Burglars took \$400 from the office of the Western Union Telegraph Company, at Bridgeport, Connecticut, Monday night, September 20th.

In sixty days from this date the Republic of Mexico will have telegraph communication with Brownsville, in the United States, two Pacific telegraph lines, and a network covering nearly the whole Republic. Within that time Escobeda's line from San Luis Potosi to Matamoros and Brownsville will be finished.

A French *savant*, named Dr. Pagadi, has discovered a method by which he can "telegraph" a moral and studious disposition or habit into a child, displacing any normal viciousness or indolence he may have inherited from his parents. The Lyceum of the Prince Imperial at Vannes, France, is about to experiment with this discovery.

The Postal Telegraph in California.

ON Tuesday evening, Sept. 21st, Mr. GARDNER G. HUBBARD addressed the San Francisco Chamber of Commerce in advocacy of his Postal Telegraph scheme. Although the Californians are very much dissatisfied with the Western Union Company, and the opposition Company, the Atlantic and Pacific States, has just been sold out to the monopoly, the California merchants do not seem to take much interest in Mr. HUBBARD's scheme, or regard it as a panacea for their telegraphic woes, as only thirty persons were present, thirteen of whom were members of the Chamber. Resolutions approving the postal telegraph were introduced, but as there was no quorum present action was postponed.

At a subsequent meeting a quorum was obtained and the resolutions were adopted.

Recent Scientific Discoveries.

ELECTRIC ALARMS FOR VARIATIONS OF TEMPERATURE.

It is in many cases—notably in some stoving operations and in the management of hot-houses—very desirable to have warning when the temperature rises above or falls below a certain heat. A rise of temperature is easily made known by what may be called a maximum thermometer alarm, a well known instrument, which is made by carrying one platinum wire in connection with a battery and bell into the bulb of a mercurial thermometer, and another wire down the tube to the degree it is not desired to exceed. When the mercury rises to this point the circuit is completed, and notice is given by the ringing of the bell. But an instrument to give warning of a fall of temperature is new to us, and we borrow a description of it from the account of MM. Besson & Kneider, who have contrived it. It consists of a spirit thermometer, the bulb of which is placed above, and the tube curved in a U shape. A platinum wire is carried into the bulb and down to the degree of heat it is wished to notify. Below this minimum the curvature is filled with mercury, which is in free communication with a second platinum wire. As the alcohol contracts with the cold the mercury will, of course, rise, and reaching the first platinum wire, complete the circuit and give the warning. One bell and the same battery will serve for the two thermometers; but it will be necessary to interpose a commutator to ascertain through which circuit the current is passing, and whether a rise or fall is indicated when the bell is rung.

Newspaper Telegraphic Science.

MUCH telegraphic and electrical wisdom is evidently running to waste among the newspaper conductors of this country.

During the recent gold excitement in this city a leading city newspaper gravely stated that the reason the telegraphic gold indicators connected with the Gold Exchange stopped working, was because the changes had been so rapid as to heat and burn the wires!

Another daily, on Monday last, in speaking of the wires building on the Pacific railroad to California, states as a matter of congratulation, that "These lines have been very carefully constructed, and the wire used is nearly all fine steel!"

Every telegrapher knows that steel is a very poor conductor, and offers so high a resistance as to render it utterly unfit for telegraphic use for lines of any length.

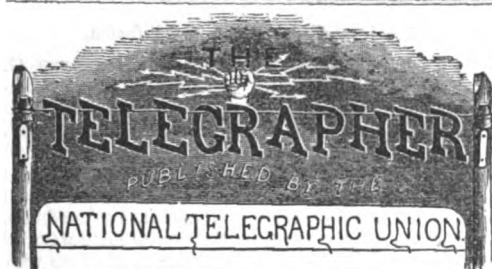
We would commend to these journalistic *savans* a careful study of *Pope's Modern Practice of the Telegraph*, rather than permit themselves to write and print such manifest absurdities, on a subject which should be to them, at least, remarkably familiar.

Packard's Training School.

WE have received a very handsome little pamphlet, giving the programme, for the ensuing year, of the excellent English Training School, for pupils of both sexes, at the corner of Broadway, Twenty-second Street and Fifth Avenue, conducted on the Pestalozzian system, of which Mr. S. S. PACKARD, the well known and popular conductor of *Packard's Monthly*, is the President. The system of instruction at this school appears to be very thorough, and each department is under able and competent instructors.

MR. PACKARD deserves success in his undertakings, as they are all calculated to improve and benefit mankind, and he devotes to them all the earnestness and intelligence which are his characteristic.

The pamphlet is a beautiful specimen of typography, and is very creditable to the printers, Messrs. RUSSELL BROTHERS.



SATURDAY, OCTOBER 2, 1869.

J. N. ASHLEY,.....Publisher and Editor.

OFFICERS OF THE
NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.

Vice-President. W. O. LEWIS....New York.

Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.

Recording Sec.. W. W. BURHANS...Box 3393, P. O., New York.

Corres. Sec....F. L. POPE.....Box 6010 P. O., N. Y.

Notice.

TO SUBSCRIBERS TO THE INSURANCE BUREAU, N. T. U.

THE Annual Convention of the National Telegraphic Union having ordered the discontinuance of the Insurance Bureau, and the refunding of the money to the subscribers, parties holding certificates of membership can obtain the amount paid thereon by forwarding the same to the Actuary, with their present Post-office address in full.

A. L. WHIPPLE, Actuary.

Box 39, P. O., Albany, N. Y.

To Members of the Insurance Bureau.

THE Annual Convention of the N. T. U. having voted to discontinue the Insurance Bureau, and refund to subscribers the money paid, we will credit with a year's subscription to THE TELEGRAPHER any person holding certificates of insurance in the Bureau, who will forward the same to us. Endorse on the back of the certificate the following:

"The Actuary will please pay the value hereof to the publisher of THE TELEGRAPHER," and sign the same.

THE NATIONAL TELEGRAPHIC UNION.

THE Seventh Annual Convention of the National Telegraphic Union met at the Western Hotel, in this city, on Thursday, Sept. 23d, but adjourned to Friday, when the necessary business was transacted and the Convention adjourned *sine die*.

This Convention was a sad contrast to those which have preceded it, when the Union was an active and powerful association of the telegraphers of the United States. Instead of the numerous and energetic body of representatives which formerly met to legislate for the interest of the telegraphic fraternity, only three districts were represented.

The address of the worthy President of the Union, Mr. W. H. YOUNG, which is published on the first page of this paper, gives a candid statement of the present condition and prospects of the Union, which should be attentively read and pondered by every telegrapher. It is a shame to the telegraphers of this country that the Union which once promised so much of good, and, as is shown by this report, has actually accomplished so much, should be allowed to fail; but if those for whose benefit it was established, and has thus far been maintained, will not stand by and sustain it, there is but little encouragement for the few who realize its importance to continue the struggle against their apathy and indifference.

Notwithstanding the unfortunate condition of the Union, it was decided not to entirely abandon it. Such alterations in the Constitution were made as were neces-

sitated by the changed condition of affairs, so as to continue the organization as inexpensively as possible, and preserve the framework, which it is hoped a revival of interest may yet render valuable, in view of the possibility of the resuscitation of the Society at some future time.

Article 3, Sec. 1, Paragraph 1, was amended so as to vest in a Convention of representatives, or in the Executive Committee, all legislative powers granted in the Constitution.

Paragraph 4 was amended so as to give each district a representation in the Convention, however small the number of its members.

Paragraph 5, providing for the nomination of district officers, and representatives to the Convention in July, was stricken out, as also paragraph 7, relative to the election of representatives, leaving these matters to the discretion of the district organizations.

Article 4, Section 2, was amended so as to constitute the officers of the Union and the publisher of THE TELEGRAPHER an Executive Committee.

Another amendment dispenses with the Annual Convention, but provides that the President shall call a Convention when, in his opinion, the interests of the Union require it, or upon the request of two thirds of the districts in good standing, within sixty days after he shall have received such request, properly authenticated.

The Executive Committee were given full control of all the affairs of the Union and of THE TELEGRAPHER, subject to revision only by a Convention of the Union, called as before provided. Other verbal amendments of the Constitution and By-laws were made, to adapt them to these changes.

Much satisfaction was expressed at the flourishing condition of the organ of the Union, THE TELEGRAPHER, and its editorial and business management were heartily approved and endorsed. The Publisher and Editor was unanimously reappointed.

It was decided to discontinue the Insurance Bureau, it not having met with the success which was reasonably anticipated, and to return to the subscribers the money paid by them—the Union assuming the expenses incurred in attempting to establish the Bureau.

After the completion of this business, and the election of officers, the Convention adjourned.

Whether this shall be the last Convention of the National Telegraphic Union it is for the telegraphers themselves to decide. If they shall realize the importance to them of the maintenance of the Union, and shall strengthen existing districts, reorganize those which have become defunct, and create new ones where they have not heretofore existed, then will the Union rise, like the Phoenix from its ashes, with renewed life, youth and vigor, and become more than ever a worthy representative of American telegraphy. It was the unanimous sentiment of those present that all the efforts and energies of the telegraphic fraternity should be concentrated for the support of THE TELEGRAPHER. While this paper exists as the organ of the practical working telegraphers of the country, it is sufficient evidence, aside from what has otherwise been accomplished (so ably set forth in the report of President YOUNG), that the Union has not been established in vain. Without the Union there could have been no TELEGRAPHER, and without their organ the fraternity would to-day occupy even a less independent and creditable position than they now do.

In pursuance of this determination to support THE TELEGRAPHER it was decided that, after defraying the obligations of the Union, the balance remaining in the treasury should, under the direction of the Executive Committee, be held for the benefit of the paper.

With this brief statement of the proceedings and plans of the Seventh Annual Convention we leave the subject, regretting only that we cannot truthfully give a more favorable report of the present condition and future prospects of THE NATIONAL TELEGRAPHIC UNION.

The Telegrapher.

THE attention of telegraphers is called to the resolution adopted by the Convention of the National Telegraphic Union, last week, in relation to the organ of the Union, THE TELEGRAPHER. It is of the utmost importance that the liberal support which this paper has received shall be continued and increased. We have no fear but that the recommendation of the Convention will meet with a hearty and general response from the telegraphers, for whose interest and advantage the paper is maintained. We shall print an extra edition of this week's paper, containing the proceedings of the Convention, for general distribution, and hope that those into whose hands it may come, who are not now subscribers, will at once send us their subscriptions, and that they will use their influence to secure the subscriptions also of their associates and acquaintances who are telegraphically employed. This paper should receive the active sympathy and support of every telegrapher, and no effort shall be lacking on our part to make it worthy of such support, and a creditable representative and exponent of the telegraphic profession. Thoroughly independent of all telegraph companies and enterprises, it will, as heretofore, relentlessly denounce telegraph swindles, regardless of who may be affected thereby, and will advocate all honest and needed enterprises, commending what is good and condemning where condemnation is deserved. We hope and believe that the recent liberal additions to our subscription list are but the indications and precursors of that yet to be realized.

Editorial Absurdities.

THE ignorance of one telegraph operator, who sent the false news of an election in Nebraska, instead of Colorado, has set all the newspapers wrong. Our distant exchanges are still following the incorrect despatch.

The above is clipped from an exchange, and we print it to correct a very prevalent absurdity of the conductors of newspapers. We will venture to say that the ignorance of either one or more telegraph operators had nothing to do with the promulgation of the news alluded to. It is the business of operators to forward despatches delivered to them for that purpose by the customers of the lines. They are no more responsible for the correctness or incorrectness of the news they send than a postmaster is for the statements contained in the letters that pass through his hands.

It is time that this loose and absurd talk about the ignorance and unreliability of operators should stop. Telegraphers have errors and mistakes enough of their own to answer for without being saddled, in addition, with those of every knave or ignoramus who may be engaged in furnishing telegraphic news reports for the Press.

Modern Practice of the Electric Telegraph.

THE demand for this excellent work still continues. The second edition has gone off well, and a third edition will soon be needed. We are constantly in receipt of letters from electricians and telegraphers, commending Mr. POPE's work in the highest terms. The practical favor with which it has been received by the telegraphers of the country is sufficient evidence of their appreciation of its merits.

Those telegraphers who have not yet obtained a copy of the work should do so at once. Orders addressed to the Editor of THE TELEGRAPHER will be promptly attended to, and the book forwarded by mail, post paid, on receipt of the price.

Crowded Out.

IN consequence of the space occupied by the proceedings of the Convention of the National Telegraphic Union, and the address of President YOUNG, much interesting matter, which would otherwise appear, has been crowded out. Our correspondents and contributors must have patience. They shall all have a hearing as soon as possible.

More Knowledge in "High" Places.

Fourth Story, 145 Broadway

A MESSAGE was found hanging on the Louisville hook, the other day, which had been received on one of the "short wires," addressed to "Norvonger." It should have been Norvin Green (Vice-President of the Western Union Company).

New Patents,

For the week ending Sept. 28, and each bearing that date.

No. 95,310.—ELECTRIC CLOCK. Leverett Bradley, Jersey City, N. J.

I claim, 1. The combination of one or more rotating circuit-closers D, with the conical pendulum B of the primary or governing clock A, substantially as specified.
2. The combination with the wheel J, and armature H, carrying the operating pawl I, of the pawls L K, and spring M, essentially as and for the purpose or purposes herein set forth.

OHIO RIVER TELEGRAPH

Connects with Western Union Lines at Louisville, to all points in this or any other country.

Offices at

LOUISVILLE, Ky.,

WEST POINT,

BRANDENBURG,

CLOVERPORT,

LEWISPORT,

BOONPORT,

NEWBURG,

BOON HAVEN,

STEPHENSPORT,

HAWSVILLE,

GRAND VIEW,

OWENSBORO,

and EVANSVILLE, Indiana.

N. M. BOOTH,

Superintendent.

POPE, EDISON & CO.,

ELECTRICAL ENGINEERS,

AND

GENERAL TELEGRAPHIC AGENCY,

OFFICE:

EXCHANGE BUILDINGS,

Nos. 78 and 80 BROADWAY, Room 48.

A necessity has long been felt, by Managers and Projectors of Telegraph Lines, Inventors of Telegraph Machinery and Appliances, etc., for the establishment of a Bureau of Electrical and Telegraphic Engineering in this city. It is to supply this necessity that we offer facilities to those desiring such information and service.

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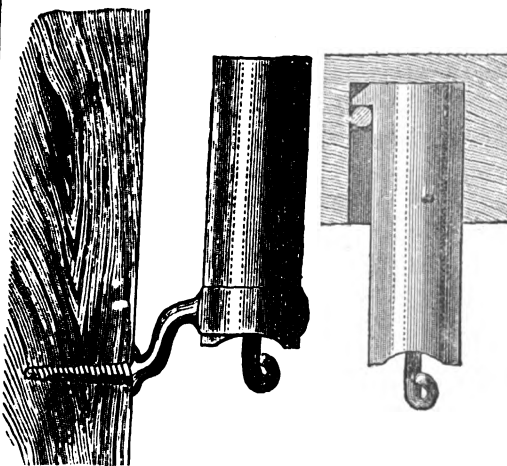
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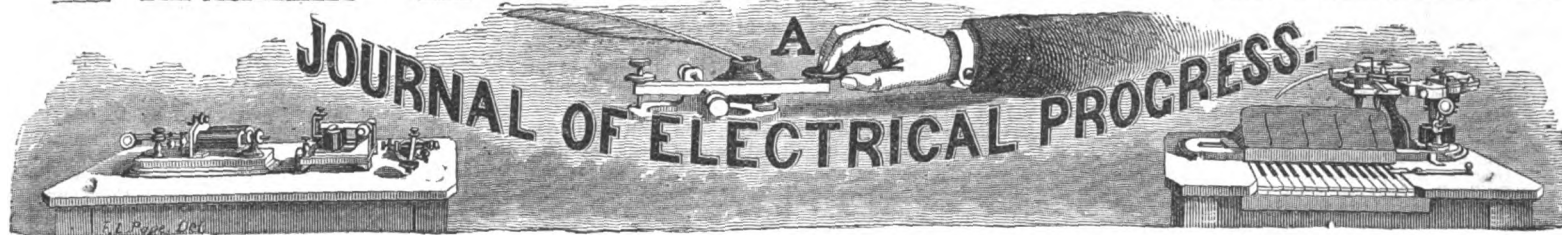
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THE TELEGRAPHER.



Vol. VI.—No. 7.

New York, Saturday, October 9, 1869.

Whole No. 169.

[Written for THE TELEGRAPHER.]

THE AMERICAN INSTITUTE FAIR.

ELECTRICITY AND ITS APPLICATIONS.

I.

A BRIEF visit to the Thirty-eighth Annual Fair of the American Institute, which is now in progress at the Empire Rink in this city, not only discloses numberless objects of interest to the general observer, but also a considerable number of articles of more especial interest to the electrician and telegrapher, some notice of which will doubtless prove interesting not only to the readers of THE TELEGRAPHER residing at a distance, but will also serve in some manner as a guide to those visiting the exhibition, who may feel desirous of inspecting the various applications of electricity to the useful arts, which are of late years becoming more and more numerous and varied.

The exhibition of articles in this class, with one or two exceptions, presents little that is entirely new, but, as a whole, possesses many interesting features. It is much to be regretted that most of the leading manufacturers of telegraphic apparatus in this country are not represented at all, as nothing is more interesting to the general public than to have an opportunity of examining minutely the machinery and appliances of the telegraphic art, from which they are in general debarred by the necessarily strict regulations of a telegraph office.

A case of instruments from the celebrated manufactory of Williams, of Boston, and another from William E. Davis, of Jersey City, together with specimens of cable and line wire from the American Compound Wire Company, of this city, embrace everything which may be classed as strictly telegraphic. In fact the exhibition, in this particular line, may be characterized as extremely meagre, in consideration of the extent to which the business of telegraphic manufactures has attained in this country within the past few years. It is especially to be regretted that the elegant and extensive displays of Messrs. Tiltotson, Chester and Bradley, which have formed such a prominent and interesting feature of former exhibitions, should in the present instance be conspicuous only by their absence, and it is to be hoped that at future exhibitions some, if not all of them, will be fully represented.

The various applications of electricity to the arts are quite fully represented in the exhibition, and some of these are not only interesting but decidedly novel—especially a system of electro-magnetic clocks, invented and exhibited by Dr. Bradley, of Jersey City, and an electromotor, employed for driving sewing machines and other light machinery, invented by Gaume.

There is also an electric clock by Kennedy, an electric burglar alarm, exhibited by Holmes, and another, apparently very similar, by Guest. Gardiner's electric gas lighter attracts much attention. There is also the usual number of electro-medical machines, which, however, involve no new principles, as far as could be discovered upon a cursory examination.

One of the most interesting objects in the whole exhibition is the electric organ action invented by H. L. Roosevelt, which is exhibited in connection with a large organ built by Messrs. Hall, Labache & Co., of this city.

In the next number of THE TELEGRAPHER a more detailed account will be given of the various inventions referred to above, which lack of space has prevented in the present number.

F. L. P.

The shares in the International Mid-Channel Telegraph Company (limited) have been allotted, and the order for the manufacture of the cable has been given to the Telegraph Construction and Maintenance Company.

Obituary.

Mr. JOHN BOHANNA, the agent of the New York Associated Press, and of the Commercial News Department of the Western Union Telegraph Co. at Mobile, Ala., died at Nashville, Tenn., Sept. 12th, 1869, in the 29th year of his age.

Mr. Bohanna was a native of Ireland, but came to the United States in early boyhood. He commenced his telegraphic career while but a boy, and had been identified with the telegraph business as operator and manager for at least ten years, and was always highly esteemed for his probity and ability, and was ever attentive to the proper management and duties of his office.

Shortly after having acquired a knowledge of the profession Mr. Bohanna was appointed to the management of the Florence, Ala., office. So satisfactory was his administration of the office, and so highly esteemed by the citizens, and so great their appreciation of his merits as a man and a telegrapher, that they presented him with a splendid gold watch and chain, suitably inscribed, upon his departure from their midst.

Mr. Bohanna had gone to Tennessee with the hope of recuperating his health, which had for some time been in a failing condition, when the final summons came to him—as it must to all of us, sooner or later—and his gentle spirit passed away.

Poor Bohanna! Combined with an amiable temper and happy disposition, he had a flow of wit and humor which adverse fortune could, apparently, neither becloud or diminish. He was faithful to every trust, strong and true in his friendships, open in his enmities, of pleasing manners and blameless life. His head and his heart had each its respective wealth of fine qualities, and the nobility of his nature proclaimed him a type of the finished man.

Gentle friend, farewell! Your name and your memory shall ever be cherished in the hearts of those who knew and loved you.

And who that knew him, even if but for a short time, will refuse to join in a heartfelt AMEN! to the *Requiescat in pace* for the soul of John Bohanna.

New Orleans, La.

A FRIEND.

A Telegraph Mania.

THE city editor of the *London Times* speaks as follows of the present tendency to speculation in telegraph lines. "During the speculation in telegraphs which is likely to characterize the next few years, the public may expect to be served by the electricians after the fashion pursued by the engineers during the railway mania. They will be invited from time to time to construct some specific line at a heavy cost, on glowing representations from the experts in these matters as to probable results; and so soon as the required subscriptions shall have been paid, they will find some rival line projected by the very same parties, who will then, in the 'rapid progress of electrical science,' have discovered that the new one can be laid in a much more speedy and efficient manner, at twenty or thirty per cent. less expense. The partisans in this game will then, with an air of candor, admit that the position of the subscribers to the first company is hard, but will, at the same time, point out that these subscribers must have known they were liable to contingencies from the march of improvement, and that they must not expect this march to be arrested out of consideration for their individual interests. In all cases, excepting those in which the company shall have obtained some kind of exclusive concessions, investors must hold themselves prepared for this fate. With many shrewd and experienced persons an impression prevails that in no branch of enterprise has there ever, in a general sense, been less pecuniary scrupulousness than among the promoters of telegraphy. This impression is, perhaps, erroneous; but, until it shall have been mitigated or removed, cautiousness may be recommended."

Telegraphic Alphabet.

WE published recently the Morse alphabet, done in rhyme. A correspondent sends us the following, which, as a more compact, and more easily understood verification of the alphabet, is worth preserving, and will, no doubt, be found useful to new beginners in the art telegraphic:

A dot and a dash stands for A, as you see,
While a dash and three dots is the symbol for B;
Two dots, space and dot, go for C, to be sure—
A dash and two dots make up D, as of yore.
E, as one dot, we may easily find;
Whilst dot, dash and dot may bring F to the mind;
G's represented double dash and a dot,
Dot four times repeated gives H on the spot—
I is two small dots together, they say;
Make a dash, dot, dash, dot when you're signalling J.
For K, dash, dot, dash will answer quite well,
And one good long dash is sufficient for L—
Two dashes for M—it comes just before N—
Which you'll put down dash, dot, when you finish "Amen."
O, dot, space and dot is, according to usage;
P, with five dots, is a very great nuisance;
Q, two dots, dash, dot, is a little bit better—
K, dot space, two dots, is a neat little letter.
In forming your R, you three dots must take,
And T with a small dash you'll easily make.
U, two dots and dash, is D backwards, be sure;
V, three dots dash, is one little dot more;
W, dot double dash is G backward, you'll find;
X, dot dash, two dots, isn't easy to mind.
Y, double dot, space, double dot is simple to get,
Z is three dots, a space and a dot, you may bet.
That your Telegraph's Alphabet finished may be,
& dot, space, three dots, the reverse is of Z.

L.

Enterprise of a London Journal.

A LONDON correspondent of the *Boston Journal* writes, in regard to the *Telegraph* newspaper of London:

"The *Telegraph* has its own special telegraphic instruments, communicating with the Parliament houses and with the Continent, and these instruments are so arranged with alphabetic signals that any of the editors, although unacquainted with telegraphy, can receive a message *verbatim*. A curious incident happened the other evening quite late, while one of the *attaches* of the paper was explaining to me the use of this instrument. It was after Parliament had adjourned, and so he thought he might touch the signal, as there could be nothing unless it were a reporter's ghost in the galleries with which it communicated. He had hardly touched the electric spring with his finger before away down the city, from the Parliament house, which we supposed deserted, came a message, "What on earth do you want?" The editor stood aghast. Could it be that some enterprising journal had stationed a reporter there, to catch the echoes of any of Mr. Gladstone's words which might be still wandering about the vaults? So he despatched back the message, "Who are you?" Presently we spelled out, "I'm a lobby; none of your larks." Which in fact meant that the signal had instantly awakened the policeman who was condemned to watch alone in the reporters' gallery, and whose first thought must have been that a revolution was in progress, or the telegraph editors had gone crazy."

Recent British Patents.

- No. 2,485.—John Jones, Walton Terrace, South Lambeth road. Improvements in apparatus for applying electro-magnetism as a motive power to carriages, boats, and machinery in general, six months' provisional protection.
- No. 2,595.—Edwin Daniel, Temple, 2 Circus place, Finsbury Circus. Improvements in the construction of telegraph railway signal scaffold, and other posts. Six months' provisional protection.
- No. 2,603.—George Henley, Essex street, Islington. Improvements in dial or needle, and alphabetical telegraphs and relays. Six months' provisional protection.
- No. 2,597.—Thomas Slater, 136 Euston road. Improvements in the construction of electro-magnetic machines as motors, and in the construction and mode of exciting batteries, and in the application of such motives and batteries to various useful purposes. Invention protected for six months, on the deposit of a complete specification.

(From the New York Ledger.)

THE RHYME OF THE CABLE.

BY WILLIAM H. BURLEIGH.

Down in the dark, where the sluggish sea
Is still as death, save when the beats
Of the great tide pulse through its far retreats
Are felt, like thrills from Eternity—
Over the floor which the waves have pressed
To the hardest rock; where never a breeze
From the storms above disturbs the rest
Of the sleepers there, whose bones lie hid
In depths where the sun n'er peered, amid
The wrecks of a thousand argosies—
Stretches, for leagues and leagues, the WIRE,
A hidden path for a CHILD OF FIRE
Over its silent spaces sent,
Swifter than Ariel ever went,
From Continent to Continent!

In and out, among heaps of gold,
And pearls as fair as the morning-rise
When the dawn's soft flush steals over the skies,
'Mid rubies and diamonds and all rare gems
That have blazed in kingly diadems—
In and out, and among the stones
Of the beautiful sea-anemones,
And where the groves of the Alga stand,
And through the coral palaces,
It winds its way, like a huge snake, rolled
Slowly along from each volumed fold—
Slowly along, till the sea is spanned
From shore to shore, and the rites are said
By which the lands are forever wed!

Deep in the bed of the sea it lies—
That wondrous way—and the fire leaps through
With the sign of the marriage sanctities
That bind the Old World to the New!
A curse on his heart, and a curse on his brain
Who dares those sanctities profane,
And the married worlds again make twain!

Let the waves peal out their solemn chime,
And the free wild winds the strain prolong;
While the nations greet with shout and song
This grandest miracle of Time!

Oh, crowning Wonder of the Earth!
Oh, Voice that calls an era forth!
Oh, Angel of the Apocalypse!
Whose awful form is seen to stand,
One foot on sea and one on land,
Proclaiming, with thy fire-touched lips,
This glorious truth, from shore to shore
Heard in one pulse-beat, "TIME SHALL BE NO MORE!"

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

A Telegrapher Abroad.—Paris on a Fete Day.

PARIS, Aug. 20th.

TO THE EDITOR OF THE TELEGRAPHER.

ON arriving here on the evening of the 14th I found the city crowded with visitors, who had been arriving for a week before, to see the annual Napoleonic fêtes. This year it was intended to make an extra display, as it was the hundredth anniversary of the first Napoleon's birthday. On Sunday morning I was awakened by the melodious tones of a hand organ playing a waltz underneath my window. The day for the Parisians—and I must say for a large proportion of the visitors, also—was a continual round of pleasure. All the theatres, opera houses, and, in fact, every place of amusement in the city, was thrown open free to the people. In the evening a grand display of fireworks took place on a height above the Champ de Mars. The crowd there was computed to be not less than half a million, and on the avenues leading to the ground there must have been as many more.

In crossing from England to France the channel well kept up its reputation as being the most sea-sickish place, perhaps, in the world. We sailed from London Bridge at four A. M. one morning, and should have been at Boulogne at noon; but, owing to the heavy wind and sea, it was nearly five P. M. before we entered the harbor. During the last six hours of this time nearly every passenger on board was sick, and some of them very bad indeed. Part of the trouble appears to me to result from the miserable little steamers which are employed. They are something like a small side-wheel tug on our rivers, and have about as much accommodation for passengers. This description answers for the steamers on all the different routes between the two countries. While on this subject of accommodation for travellers, I may say that in everything but speed the Americans are ahead of the British, and, even on the speed question, we are equally as good, as far as steamers are concerned. Their trains, however, beat ours, especially at long distances. As a specimen, look at this: The east coast express, from London to Edinburgh, leaves London at 8.00 P. M., arriving in Edinburgh at 6.05 next morning. The distance is 406 miles. We have nothing like that in America, and it is doubtful if we ever shall.

While in Paris my time was so much taken up visiting palaces, parks, &c., I really had no time to look after anything connected with the profession. I, however, observed that the French lines are very well built. Unlike the British and American, they do not use cross-bars, and never put a line on top of the pole. The poles were charred for six or seven feet at the bottom, and well stayed and braced. They were of good size, and looked as if they might last for a century. My ignorance of the French language prevented me from getting much information on these subjects.

I leave for London to-morrow, and will write you again from there. I do not expect that I will see much of the telegraph, even in London; but my letters may be of interest to your readers as the observations of an American operator abroad. LOCAL.

Telegraph Matters in Baltimore.

BALTIMORE, Md., Sept. 19th.

TO THE EDITOR OF THE TELEGRAPHER.

THE progress of the telegraph in this city, within the last ten years, has not been less remarkable than elsewhere, and perhaps a few statistics may not prove uninteresting to the numerous readers of THE TELEGRAPHER.

In 1861 the American Company had a monopoly of the telegraph business in this city, and it was all done at that time with a force of eight operators, three or four clerks, about a dozen messengers, and with but one office in addition to the main office.

In the spring of 1862 the Independent line, as it was then called, but which was subsequently more generally known as the United States Telegraph Company, established offices here, and soon obtained a considerable share of the business. This company opened several branch offices, and the active competition thus established made matters lively for the American Company, and created a largely increased demand for the services of experienced operators. After three years of active competition the Western Union absorbed both the American and United States companies, and became, for a time at least, "master of the situation," having only the Bankers and Brokers' Company to contend with. This comparative monopoly was, however, but of brief duration, and there are now four companies in the field here, competing for business, with between twenty and thirty branch offices, and apparently all doing a flourishing business. The number of operators employed in the main, city line, and depot offices, is forty-five, with at least a dozen clerks and thirty messengers.

The Western Union main office, at the corner of Baltimore and South streets, is in charge of A. Wilson, Jr., a good manager and executive officer, and a thorough electrician, and generally esteemed for his many good qualities.

The Franklin Company's office is in charge of Mr. Kennedy Duff, formerly of New York, and the Pacific and Atlantic office is managed by the polite and gentlemanly Harvey Myers, formerly of Erie, Pa. These two companies occupy the same office, which is located a few doors above the Western Union office, on Baltimore street.

The Bankers and Brokers' line is also in the same block, one door below Calvert street. Mr. J. J. G. Riley is the manager, and is in every respect a gentleman, and well qualified for his position. The rapid increase of the business of this line shows that it is properly appreciated by the business community.

The fire alarm telegraph office is located on Holliday street, with that gentlemanly veteran operator, of the once powerful but now defunct Magnetic Telegraph Company, Mr. John H. Whitman, as its efficient superintendent. Messrs. Crumbacker, Gordon, Lucas and McAleese, all Morse operators, hold positions in the office. LOMBARD.

Striking Oil.

OIL CITY, PA., Sept. 18.

TO THE EDITOR OF THE TELEGRAPHER.

AS will have been noticed in the "Personals," Mr. M. E. Luce, formerly manager of the Western Union office here, has resigned, to engage in the oil business with our old friend, Mr. James Lowe, an old telegrapher, and with whom many of your readers are doubtless acquainted.

On the occasion of his retirement from the telegraph business, it is but just to Mr. Luce to say that, during his administration as manager, which has been since the first opening of the office here, he has won the confidence and esteem of the business public as well as the good will of those who have been associated with him, by his gentlemanly manners and courteous treatment. He has at all times endeavored to serve the public as well as the Company's interest, and we feel safe in saying that but

few men in his position could have rendered satisfaction to all concerned for so long a period. In his new business we can but wish him success, and with his numerous other friends hope he may have many oil "strikes," and that no "crosses" will obstruct his pathway in the future. BEN.

Defeat of the A. & P. States Company.—Telegraphic Changes.

SACRAMENTO, Cal., Sept. 19th.

TO THE EDITOR OF THE TELEGRAPHER.

THE Atlantic and Pacific States Company, after a prolonged struggle with the Western Union Company for the business of the Pacific Coast, has at last been obliged to succumb and sell out its lines to the "oppressive monopoly," and the Californians are once more given over to its tender mercies.

Owing to the death of Mr. Youtz, late assistant superintendent of the Western Union Company, with headquarters at San Francisco, Mr. Van Valkenburg, chief operator of the Western Union office here, has been promoted to fill the vacancy. His position in the office here will be filled by Mr. Clowe, late of Salt Lake City.

On the Central Pacific Railroad matters continue about the same as usual. I understand that Mr. Foley, of H. office, C. P. R. R., contemplates taking the management of the cable between here and Washington. I hope this may be true, as he is a very capable gentleman and a thorough electrician.

The necessity for the services of a competent manager has long been felt on that line. SOME DOGS.

Obituary.—A Busy Wire.—Complimentary.

WASHINGTON, D. C., Oct. 3d.

TO THE EDITOR OF THE TELEGRAPHER.

DANIEL E. STIPES, one of the pioneer telegraph operators in this country, died at Hancock, Washington Co., Md., on Thursday, the 23d of September last, and was buried in the cemetery at Frederick City.

When the first line of telegraph was built to the West, along the Baltimore and Ohio Railroad, he went into the office at Harper's Ferry, and in a year or two, that is, about 1850, he was placed in charge of that office, he being then a youth of about eighteen. Shortly afterwards a line was built to Winchester, of which he was made superintendent, being noted not only for his expertness as an operator but for his ability to detect faults and devise remedies for imperfect working of lines, batteries and instruments. He was subsequently appointed to a clerkship in the sixth auditor's office of the Treasury Department, and was afterwards employed on the telegraph line of the Baltimore and Ohio Railroad. While employed by this Company he was for some time superintendent of the Western Division of their telegraph line, with headquarters at Oakland. At the commencement of the civil war, in 1861, he was appointed by the State of Virginia to reconstruct the line from Harper's Ferry to Winchester. After the evacuation of Harper's Ferry by Gen. Jackson, in 1861, he went south with the army, and was employed by the Confederate Government as an operator, and at one time held a commission as a staff officer. His pleasant manners and unflinching good nature won him hosts of friends in this district, and throughout Maryland and Virginia, who will be sorry to hear of his untimely demise.

He has been subject to hemorrhage of the lungs for many years, and consumption was no doubt the cause of his early death, for which he had prepared himself by seeking the consolation of the Christian religion. He leaves a widow and one child.

There is a wire in this city about four miles in length, and we doubt if there is another wire in the country, of the same length, performing so many different branches of telegraphing. The wire runs from the fire alarm office, connecting the B. and B. and W. U. offices, by which they transfer business from one Company to the other, thence to the State Department, by which business is sent to both the B. and B. and W. U. offices. The majority of the business from the State Department being cables—and in case of long cables the wire is connected through to the cable office in New York, and they are sent direct. In case of necessity this wire can be connected through to any point. At five minutes before twelve o'clock every day this wire is connected, by the fire alarm office, to a wire running to the Washington Observatory, and also with a wire connecting the jewelry establishment of Messrs. M. W. Galt & Brother, and is so arranged that at precisely twelve o'clock, when the ball falls, it causes the circuit to cease, and time is sent by the W. U. Company to all parts of the South, as well as Messrs. Galt & Brother getting correct time every day.

It is also used by police headquarters for sending telegrams to either the B. and O. or W. U. offices, to be forwarded. After four (4) o'clock, P. M., each day, this wire is attached to a fire alarm box at the State Department, and remains so until nine o'clock the next morning. This is in case of fire, it being used as a fire alarm wire. If there is another wire of the same length in the country, performing as many or more different branches of telegraphing, we should like to hear about it.

Commissioner Fisher, of the Patent Office, a few days since paid the fraternity a high compliment, by asserting, in conversation with a gentleman, that an experienced and competent telegrapher was fitted to engage in almost any branch of business. SPRING.

PERSONALS.

Mr. HARRY POWELL is running the Sacramento office of the C. P. R. R., nights.

Mr. CHAS. COGLAN, late manager of the A. & P. States telegraph office, at Sacramento, Cal., proposes to go into other business and abandon telegraphing for the present, at least.

Mr. CHAS. THOMAS has become a Western Union operator at Sacramento, Cal.

Mr. J. M. HUBBARD, ex-managing agent of the defunct A. & P. States Company, has accepted a position as local editor of a daily paper.

Mr. D. MAREAN, of the W. U., Washington, D. C., office, who has been absent on leave for the last month, returned and resumed duty, Oct. 1st.

Mr. HARRY LOMBARD, of the Willard's Hotel W. U. office, Washington, D. C., left Oct. 2d, on fifteen days' leave. Mr. HOLLY will fill Mr. LOMBARD's position during his absence.

Mr. PAUL WORDSWORTH, formerly of the Saratoga, N. Y., office, has taken charge of the Palmyra, N. Y., office, of the Atlantic and Pacific Co.

Mr. HENRY SILLECK formerly of W. U. office, at Farmer Village, N. Y., has taken charge of the A. & P. telegraph office at Seneca Falls, N. Y., vice A. E. WILLIAMSON, resigned.

Mr. JOHN R. JOHNSTON, one of the best and most reliable operators in the Western Union office, 145 Broadway, resigns on first prox., and devotes his time exclusively as book-keeper for and operator of the private line of HARRISON BROS. & Co.

Mr. J. K. BUTLER, of Stamford, Conn., office, has been appointed manager of the Bridgeport, Conn., office Western Union Co.

Mr. M. P. CONWAY, of the New Rochelle, N. Y., office, takes charge of the Stamford, Conn., Western Union office.

Mr. LUCAS, from the New Haven, Conn., office, takes charge of the New Rochelle, N. Y., Western Union office.

Mr. J. LOFTIN has been transferred from Separation to Table Rock.

Dr. R. J. HENRY has been appointed manager of the Western Union office lately opened at Elk Ridge Landing, Md.

Mr. L. STEWART, after thirteen years' service in the Millen, Georgia, office, has resigned, and goes into business on his own account, at Taylor's Creek, Liberty County, Georgia.

Mr. C. H. HASKINS, General Supt. of the late Mississippi Valley National Telegraph, has been appointed Supt. of the Mississippi Division of the Pacific and Atlantic lines.

Mr. O. H. LINCOLN has been appointed manager of the Buffalo office of the Atlantic and Pacific Co., in place of Mr. J. H. Crane, retired.

Mr. C. H. PARENT has resigned his position as agent and operator of the Union Pacific R. R., at Bitter Creek, to return to his home in Canada.

Mr. A. H. LEE has been appointed agent and operator at Bitter Creek, in place of Mr. Parent, resigned.

Mr. M. M. PATTERSON has been transferred from Table Rock Station to Rawlins, U. P. R. R.

Mr. KEARNS has been appointed agent and operator at Table Rock, U. P. R. R.

Mr. JOHN V. GRISWILLEN has been appointed manager of the Western Union Telegraph office at Lena, Ill.

Mr. D. H. FRENCH has accepted a position as agent of the Ill. Central Railroad, and operator at Hudson, Ill.

Mr. J. D. LETTIER has accepted a situation as operator at the "Machine Shops" of the Western Union R. R., Racine, Wis.

Mr. J. M. JOHNSON, manager of the Mendota office of the W. U. Telegraph, has just returned from a trip South.

Mr. M. E. WILCOX, manager of the Freeport office, Ill. Central Railroad, has gone on a month's vacation.

Mr. C. S. MILLER, Train Despatcher of the Illinois Central Railroad, at Amboy, has returned to duty after several weeks' absence, visiting his eastern friends, much improved physically by his vacation.

THE TELEGRAPH.

Great Destruction of Telegraph Lines.

A VERY heavy rain storm, covering a wide extent of country, commenced on Sunday morning, Oct. 3d, and continued almost without intermission until Monday afternoon. The rain fall was almost unprecedented in some places, amounting to eight and ten inches.

Great damage was done, especially to railroads and telegraph lines. Travel in all directions from New York was interrupted. The telegraph lines were prostrated and telegraphing almost entirely suspended. In many places the poles and wires were prostrated, and telegraph repairers in some instances barely escaped drowning, in their efforts to repair the lines.

Mr. Tallman, the manager of the Franklin Telegraph station at Norwich, Conn., while attempting to ford a swollen stream with a horse and wagon, in order to mend broken telegraph lines, was swept down the stream. His horse was drowned. No portion of the wagon could be found. Tallman was nearly drowned, and but for the assistance of friends would never have reached the shore.

All the wires between New York and Boston, except those used for cable connections, were down on Monday afternoon and evening. Late Monday night the Western Union Company succeeded in patching up one wire to Boston. Such a storm has not been experienced for twenty-five years past, and the damage to the telegraph wires must necessarily entail considerable expense on the companies, to say nothing of the loss arising from the inability to transmit business offered.

The Cuba Cables.

FROM some unexplained cause a difficulty has occurred on the first Cuba cable which renders it temporarily unserviceable. The second Cuba cable, however, is intact, and a station has been established at Cojimar, about five miles from Havana, and messages are sent to Guanabacoa by courier, and from there are transmitted by the Government line to Havana.

The trouble on the first cable is in shallow water, near Key West, and little difficulty will be experienced in raising and repairing it.

The Miss. Valley National Telegraph Co. Enjoined.

THE Atlantic and Pacific Telegraph Company have filed a bill in the Supreme Court at Chicago, Ill., for an injunction against the Mississippi Valley Telegraph Company, the Pacific and Atlantic Telegraph Company, and W. C. Baldwin, to restrain the Mississippi Valley Company from giving possession of its lines to the Pacific and Atlantic Company. The plaintiffs claim that they made a contract with the Mississippi Valley Company in October, 1868, for twenty years, to exchange business and to protect each other, and that the latter agreed not to build a line from Omaha to Chicago, but that the Mississippi Valley Company is trying to sell its lines between Chicago and St. Paul and St. Louis. An injunction was issued.

The American Fire-Alarm and Police Telegraph.

AFTER a protracted contest the City Council of Newark, N. J., by a vote of nineteen to three, awarded the contract for the construction of a fire-alarm telegraph for that city to Gamewell & Co., who will at once proceed to execute the contract. The contest in this case with a rival company has been very bitter, and the various systems of fire-alarm telegraph have been very critically investigated—resulting, as before stated, in the award to Gamewell & Co.

The same firm have also just concluded the contract for the construction of a fire-alarm telegraph with the municipal authorities of Richmond, Va.

Removal.

THE Fire-Alarm Telegraph Office at Albany, N. Y., has been removed from its former location in Broadway into the new City Building on South Pearl street, where pleasant and commodious rooms have been provided for its accommodation. Under the able management of Mr. A. L. Whipple, the efficient Superintendent, the Fire-Alarm Telegraph has become an indispensable institution in Albany, and since its comparatively recent establishment, has been the means of preventing the destruction of

much valuable property. The American (Gamewell) system is in use there, as in most other places in this country where the Fire-Alarm Telegraph has been introduced, and has given the most entire satisfaction.

TELEGRAPHIC BREVITIES.

Mr. SCUDAMORE and a staff of officers were in Birmingham, making arrangements for the working of the English telegraphs under the Government from the 1st January next. The instruments of the various companies will be collected at the principal money order office, and the present office in the Exchange will be retained as a receiving office. Various branches will be established in the towns, and most of the present staff will be retained in the service of the Government. Those persons not required will be pensioned if they have been five years in receipt of quarterly salaries, or seven years of weekly wages from the companies.

Lake Cochituate, from which Boston, Mass., obtains its water, is now connected with the City Hall by telegraph. The wire runs through the main conduit for many miles.

The number of telegraphic despatches forwarded last year by the lines of the North-German Bund was 3,544,650 inland, and 759,950 outland; altogether, 4,304,600 telegrams—1,211,613 more than in 1866.

Interesting experiments as to the relative merits of light and heavy deep sea telegraph cables are to be tried by the company which purposes shortly to lay the Red Sea telegraph.

The Western Union Company have opened an office in the great Fair of the American Institute, Third avenue and Sixty-third street, in this city.

Orders have been received at the Charlestown, Mass., Navy Yard to raze the old Niagara, which laid the first Atlantic Cable, and make a sea-going iron clad of her.

!Unfortunate Burglars.

THE house of Cyrus W. Field, Esq., at Irvington, was entered by burglars on Sunday, who left their booty on the lawn and came back on Monday, when, the family having returned, they were foiled.

Very Apropos.

Two operators were once struggling for circuit upon an eastern wire, but after more than an hour had been wasted, in which neither had come off victorious, another operator on the line hearing the dispute, got circuit, and drawled out—

Two plugs with but a single thought;
Two keys that beat as one.

Complimentary.

The *Providence (R. I.) Journal* (which, by the way, is one of the best newspapers in New England), in speaking of the new tariff system of the Western Union Company, thus complimentarily notices our old friend, HENRY CARPENTER BRADFORD, the manager of the Western Union office in that city:

"The management of the Western Union Company's office here will continue in the experienced hands of Mr. HENRY C. BRADFORD, whose direction of telegraph matters in this city for the leading company, during the past ten years or more, has ever been marked by dignity, ability and zeal."

Volume Three Wanted.

A COMPLETE copy of volume three of THE TELEGRAPHER is wanted immediately, and a fair price will be paid for it, either bound or unbound, by the Editor of this paper.

Also wanted, a copy of No. 154, Vol. V, to complete a set.

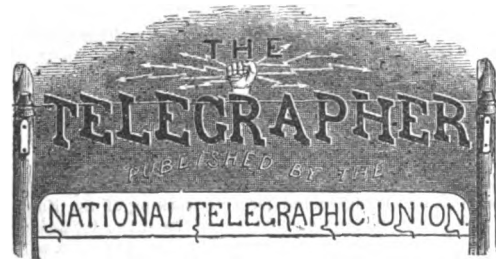
Correction.

Mr. J. J. DICKEY, Supt. Union Pacific R. R. Telegraph desires us to correct the statement erroneously made by our Omaha correspondent, "QUILL," that J. J. KINNAMAN had been designated as his assistant. "QUILL" was doubtless misinformed in regard to the appointment.

DIED.

STILES.—Sept. 23d, at Hancock, Washington County, Md., of consumption, DANIEL E. STILES, for many years a telegraph operator and superintendent on southern lines.

ROBINSON.—At Evansville, Ind., Oct. 4, suddenly, DEWITT C. ROBINSON, for the past twelve years superintendent of the lines of the Evansville and Wabash Telegraph Company.



SATURDAY, OCTOBER 9, 1869.

J. N. ASHLEY,.....Publisher and Editor.

OFFICERS OF THE NATIONAL TELEGRAPHIC UNION.

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Vice-President..W. O. LEWIS....New York.

Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.

Recording Sec..W. W. BURHANS...Box 6010, P. O., New York.

Corres. Sec....F. L. POPE.....Box 6010 P. O., N. Y.

TOO MUCH COMPETITION.

As this paper has been a consistent advocate of competition in the telegraph business, it may appear somewhat inconsistent now for us to complain of too much competition. There may, however, be too much even of a good thing. The success of the Anglo-American and Franco-American Cable Companies has caused a number of new cable lines to be projected between the Old and New World, which, if laid, cannot but prove disastrous to investors. While cable telegraphing has been wonderfully developed within the last three or four years, this development furnishes no warrant for the belief that the recently projected lines can prove remunerative to their investors. Under the competition already established the charges for cable service have been reduced to as low a figure, probably, as can be made to pay. Until, therefore, the expense of laying and operating cable telegraphs can be materially reduced, any further reduction in tolls is likely to prove disadvantageous to stockholders, who are entitled to reasonable remuneration for their investments.

While we have uniformly advocated reasonable competition in the telegraph business, we have never favored the reduction of tolls below a remunerative standard. It is not for the interest either of owners of telegraphs, telegraph employes, or for the permanent benefit of patrons of telegraph lines, that business should be transmitted at the ridiculously low charges which many telegraph reformers have advocated. We have heretofore demonstrated in our own columns that what is termed "cheap telegraphing" is impossible, without serious loss to the parties engaged in the business. The assertions of such evident ignoramuses (telegraphically) as B. GRATZ BROWN, E. B. WASHBURN, and other less prominent advocates of postal telegraphs, that despatches should and could be transmitted at prices assimilating to letter postage, is so manifestly absurd and unwarranted, by the experience of those for many years past engaged in the business, that were it not that the public are apt, in their ignorance of the financial data connected with the operation of telegraph lines, to be carried away with their theories, they would not deserve refutation.

As we have before demonstrated, the construction, maintenance and operation of telegraph lines is expensive, and until the capacity of telegraph instruments and wires for the transmission of business is very largely increased, a reduction of charges to the figures proposed by these parties is impossible, without serious loss to the capital invested in the business, whether it be that of private individuals or of the Government.

The ocean cables already in operation are by no means fully employed as yet, and while this is the case a multiplication of the wires must entail a further division of the

business, and a reduction of the receipts of all the companies below a remunerative amount.

We favored the laying of the French cable because we believed that a reasonable competition would prove of advantage to the public, and the result has justified this anticipation. We do not at this time favor the laying of new cables, because we do not believe that the interests of the public demand it, or that those interests will be advanced thereby.

Some of the new companies propose to lay a very light and cheap cable, and claim that by so doing the amount of capital invested will be so much reduced as to render possible a further material reduction in cable tolls. Previous experience with light cables has not been such as to warrant faith in their permanence for long ocean lines. Those which have been heretofore laid, as we understand, have soon lost their insulation and conductivity, and none of them have proved successful, at the outside, beyond a year's time, and some of them have failed within a few weeks after they were laid down. It is very tempting to capitalists to be told that for from four hundred thousand to five hundred thousand pounds they can be put in possession of equally as good and permanent lines as other companies have laid at double or treble the expense, and that with greatly reduced tolls largely increased profits will be realized. Before investing in such enterprises, however, capitalists will do well to investigate the probable efficiency and permanence of the proposed cables.

While we are opposed to the laying of additional European telegraph cables *at this time*, we do not desire to be understood as arguing that the present telegraph facilities will be always sufficient. The business will grow and increase, and new cables will be required to accommodate this increased business. What we do argue is simply that, as yet, this business is in its infancy. It will require time and experience to give it its full development. The present facilities are sufficient for the amount of business likely to seek them for at least a year or two to come; the present charges are as reasonable as experience thus far has shown to be practicable, with a due regard to the interests of stockholders, and the existing competition is sufficient to protect the interests of the public.

Competition is necessary and beneficial, but excessive competition is neither desirable or likely in the end to prove advantageous to the public. Let us wait the further development of cable business, and not sacrifice millions of dollars in wild, and in all probability pecuniarily unsuccessful enterprises, however advantageous they may seem likely to prove to interested projectors, cable manufacturers or inventors. When the proper time comes we shall not be slow to advocate new cable lines between Europe and America, but to us it seems certain that the time is not now favorable for success in such enterprises.

Electrical and Telegraphic Engineering.

THE necessity for a more general application of scientific knowledge and experience to the construction and operation of telegraph lines, and to all matters connected therewith, has become very apparent. In Europe this necessity was earlier appreciated than in this country, and many able scientific, electrical and telegraphic engineers are there fully and profitably employed.

In this country, with the exception of Mr. MOSSES G. FARMER, of Boston, whose great ability and attainments as a scientific electrician have placed him in the front rank of modern scientists, we know of no one who has heretofore devoted himself to this important work. As will be seen from the advertisement of POPE, EDISON & Co., in this paper, this firm offer their services for such practical and scientific services in this city. Mr. POPE's superior ability and acquirements, as a practical telegrapher and electrician, are too well known to need any extended commendation from us. Although young in years he has, by careful study and experiment, fully qualified himself to give valuable assistance to such as

may desire his services. As an operator of several years' experience he has acquired that knowledge of the *practical* working of the electric telegraph which will render his services of peculiar value in all matters pertaining to the construction and operation of telegraphic lines, the due adjustment and proportions of instruments, insulation, batteries, etc., which render telegraphs accurate and reliable.

Mr. EDISON is a young man of the highest order of mechanical talent, combined with good scientific electrical knowledge and experience. He has already invented and patented a number of valuable and useful inventions, among which may be mentioned the best instrument for double transmission yet brought out.

Their united genius and science cannot fail to render their services most valuable to all who may have occasion to employ them, and must ensure their constant and profitable occupation.

Connected with their other business they have established a purchasing bureau, which cannot but prove a great accommodation to persons at a distance, who may desire to purchase telegraph material, supplies, books, etc.

We commend this new firm to the favorable consideration of the telegraphic public, with entire confidence that they will afford to those who may desire their assistance complete satisfaction.

More Lies.

WE have received the circular of a fellow by the name of HOLLENBECK, who runs a plug manufactory at Indianapolis, Ind., which we think contains rather more than the usual number of false statements put forth by such concerns. He says some of his pupils (victims?) write that they are *saving* one hundred dollars per month out of their salaries as telegraphers. As one hundred dollars a month is an exceptional salary for even first class telegraphers, out of the large cities, this fellow's pupils must save double or at least more than the whole amount of their compensation.

He also states that "We have information from the East that first class operators were never in greater demand than now."

The managers of plug factories at the East always have information from the West that operators are in demand, etc. Whatever may be the demand for *first class operators* the market is largely overstocked with Telegraph Institute plugs, and it is a waste of money for any more country girls and boys to pay such establishments for services they *cannot* render in return.

Gone to California.

Mr. WM. ORTON, President of the Western Union Co., started on Saturday, October 2d, for California, by railroad. We understand that in this trip Mr. ORTON purposes to combine recreation and business. He will give personal attention to the interests of the Western Union Company on the Pacific coast, and seek relaxation and rest from the arduous labors which the enormous business interests of the company impose upon him.

Returned Home.

Gen. W. F. SMITH, the President of the International Ocean Telegraph Company, who has been for some months past in Europe, on telegraph business, returned home on the steamer *China* from Liverpool, which arrived here on Wednesday last.

Gen. SMITH has been very successful in completing the business for which he went abroad, and returns in excellent condition, and at once resumed the personal supervision and management of the affairs of the Company, of which he has proved himself to be a most able and efficient executive officer.

Nearly four and a half millions telegraph messages were sent in North Germany last year—an increase of more than one third over 1866.

Notice.

TO SUBSCRIBERS TO THE INSURANCE BUREAU, N. T. U.

THE Annual Convention of the National Telegraphic Union having ordered the discontinuance of the Insurance Bureau, and the refunding of the money to the subscribers, parties holding certificates of membership can obtain the amount paid thereon by forwarding the same to the Actuary, with their present Post-office address in full.

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will be the application of Electricity to the Arts and Sciences.

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for Special Telegraphic Service will be designed, and their operation guaranteed.

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Special attention will be paid to the application of Electricity and Magnetism for Fire-Alarms, Thermo-Alarms, Burglar-Alarms, etc., etc.

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We possess unequalled facilities for preparing Claims, Drawings, and specifications for Patents, and for obtaining prompt and favorable consideration of applications for Patents in the United States and Foreign Countries.

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Attention will be paid to the construction of Experimental Apparatus, and experiments will be conducted with scientific accuracy. Parties at a distance, desiring Experimental Apparatus constructed, can forward a rough sketch thereof, and the same will be properly worked up.

DRAWINGS, WOOD ENGRAVINGS, CATALOGUES, Etc., prepared in the best and most artistic manner.

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Telegraph Wire, Cables, Instruments, Insulators, Scientific and Electrical, and Electro-Medical Apparatus, Telegraph Supplies of all descriptions, Telegraphic and Scientific Books, etc., will be purchased for parties favoring us with their orders, and forwarded by the most prompt and economical conveyance, and as cheaply as the same could be purchased by our customers personally. Our facilities for this business are unexcelled.

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Any information desired in regard to the above system will be cheerfully and promptly furnished upon application at the office. A pamphlet, setting forth more fully its advantages and superiority, has been printed, and will be supplied to Municipal Authorities and others interested in Fire Alarm and Police Telegraphy, upon application as above.

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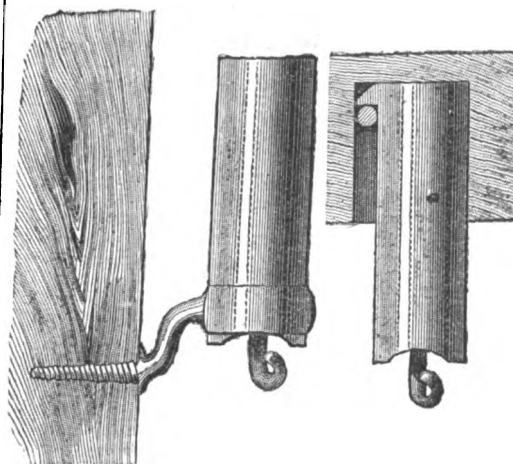
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This instrument is very effective, and with less complication than any other form. It requires no extra local battery, and it will be evident to Telegraphers, upon reading the following claim from the Patent of Mr. BUNNELL, that any other Repeaters whose Governors or "Extra Magnets" employ the same local battery that works the Sounders are infringements.

Claim First—"The employment of two Governor Magnets, placed in the same local circuits as the respective Local Sounders in a Telegraphic Repeater."

These instruments are now made in two different styles, at \$120 and \$135 a set, consisting of two Relays, two Sounders, two Keys, and Governor.

JONES' LOCK SWITCH BOARD,

a most compact and reliable Switch, forming a clean spring-locked connection between any number of wires, occupying for each different connection only one square inch of space, and though made of the largest size, not subject to the warp and contraction of wood-work.

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We are now prepared to furnish, after an experience of three years, an Insulated Wire, which can be buried in the earth or exposed to rain and sun, or to the vapor of acids, without injury. Professor SILLIMAN, who has exposed it to the most destructive agencies, finds that it remains uninjured in an atmosphere of ozone, which would destroy gutta-percha in a few hours. It exceeds glass or any other known substance as a non-conductor. We have made special arrangements to furnish this article for office purposes at a reduced rate.

ALSO,
POPE'S MODERN PRACTICE
 OF
THE ELECTRIC TELEGRAPH,
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 OF THE
TELEGRAPH,
 AND
WOOD'S PLAN OF TELEGRAPH INSTRUCTION.

We manufacture the Genuine ELECTROPOION BATTERY with Patent Platina Connection, introduced by us eight years since; also, THE ALPHABETICAL OR DIAL TELEGRAPH, now extensively used in this and other cities for private lines, being easily and quickly learned by any one.

We offer for sale, among other novelties, a "SOUNDER" that will work practically with a single DANIELL cell, a BATTERY that does not require to be taken down but once a year, and the very best MAIN LINE SOUNDERS made.

Our CATALOGUE, embracing a large amount of new matter and description, is now ready for distribution.

CHARLES WILLIAMS, Jr.,
 (SUCCESSOR TO HINDS & WILLIAMS,)
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 Boston, Mass.,
 MANUFACTURER OF
TELEGRAPH INSTRUMENTS
 AND
Galvanic Batteries of all kinds.
Wholesale and Retail Dealer in Telegraph Supplies, etc.
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OFFER!
GREAT INDUCEMENT TO WORK
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TELEGRAPHERS' ORGAN.

THE LIST OF SUBSCRIBERS TO
THE TELEGRAPHER
Must be doubled within Three Months.

Our previous offers of Premiums to those who would interest themselves in increasing and extending the circulation of
THE TELEGRAPHER
 having proved so generally acceptable, and having met with so earnest a response, we have decided to present

A NEW LIST OF PREMIUMS,
 even more liberal than those heretofore offered. From past experience, we think we are justified in anticipating, as a result of the following offer, that the subscription list of THE TELEGRAPHER will be

DOUBLED WITHIN THE NEXT THREE MONTHS.

The following Premiums will be open until October 31st, 1869. All Premiums will be forwarded, PRE-PAID, to their destination. For 25 subscribers, we will give to the person sending the names and money a first class No. 1 Box Relay, warranted. For 15 subscribers, a No. 1 Telegraph Key, either Caton or Self-closing, as may be preferred. For 10 subscribers, a No. 1 Pony Sounder. For 6 subscribers, Pope's Modern Practice of the Electric Telegraph and Sabine's Electric Telegraph. For 3 subscribers, Pope's Modern Practice of the Electric Telegraph.

IN ADDITION TO THE ABOVE PREMIUMS,
 we will give to the person who shall send us, by or before October 31st, 1869, the largest number of subscribers, not less than FIFTY, one of

DURANT'S SELF-ADJUSTING RELAYS,
 OR
A CATON POCKET INSTRUMENT,
 AS MAY BE PREFERRED.

It is understood that subscriptions to be counted for Premiums must be of persons not now on our books; that is to say, renewals of subscriptions will not entitle to participate in Premiums.

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TWO DOLLARS PER YEAR.

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THE TELEGRAPHER:
A Journal of Electrical Progress.
 PUBLISHED EVERY SATURDAY
 BY THE
NATIONAL TELEGRAPHIC UNION
 AT
 78 & 80 BROADWAY, ROOM 48, NEW YORK.
SIXTH VOLUME.

The SIXTH VOLUME OF THE TELEGRAPHER will commence with the issue for SATURDAY, AUGUST 28th, 1869.

The Fifth Volume has proved more successful pecuniarily than any which has preceded it—the confidence of the fraternity in their organ, and in its intelligent devotion to the advancement of their interests, increasing from year to year, and securing for it a more general and united support from the practical telegraphers of the country.

It will in the future, as in the past, maintain its reputation in every respect.

A FIRST CLASS TELEGRAPHIC NEWSPAPER. It will continue to be, as heretofore, thoroughly independent of all Telegraph Companies or combinations; it will advocate, fearlessly and persistently, the just rights of the TELEGRAPHIC FRATERNITY, by whom, and in whose interests it has been established and supported. All matters relating to Telegraphy will be discussed in a progressive, independent and liberal spirit, and it will seek to elevate not only the scientific but the moral and social standard of the Telegraphic profession.

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It will continue to be illustrated with ORIGINAL ENGRAVINGS of new and interesting inventions, and other subjects pertaining to Telegraphy, prepared expressly for its columns by able and competent artists. This is a feature possessed by no other Telegraphic journal in the world.

Experience, energy, industry and capital will all be combined to make THE TELEGRAPHER what it purports to be—a JOURNAL OF ELECTRICAL PROGRESS, and to render it worthy of the continuance of the liberal support which it has received from the profession and others interested in Electrical Science and Telegraphic Art, and to make it a creditable representative of the practical Telegraphic talent of the United States.

Correspondence, items of news or personal interest, and newspaper extracts relating to Telegraphic matter, are solicited. The co-operation of every person interested in sustaining a first class Telegraphic newspaper is cordially invited.

THE TELEGRAPHER is the only journal in this country devoted strictly and exclusively to Telegraphic interests.

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 One copy, one year, \$2 00
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 Twelve " " " " 17 00
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THE PAPER WILL ALWAYS BE DISCONTINUED WHEN THE PAID SUBSCRIPTION EXPIRES.

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 One insertion, per line, 15 cents.
 Each subsequent insertion, per line, 10 "

No advertisement inserted for less than one dollar.

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All Communications and Letters relating to, or intended for THE TELEGRAPHER, must be addressed to

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[Prepared for THE TELEGRAPHER.]

THOUGHTS ON TELEGRAPHIC COMMUNICATIONS THIRTY-SIX YEARS AGO.

By KEY.

In 1833 Hon. John Pickering, since deceased, by request of the Boston Marine Society, delivered a lecture on the subject of "Telegraphic Language," tracing the art from the first communications made by Dorches, at the siege of Troy, until the date of the address. In conclusion he makes the following curious reflections and suggestions, which all must acknowledge to border very closely upon the prophetic:

"But the application of the art to other subjects will naturally follow the progress of those rapid improvements which are believed to be characteristic of the present age. If, for instance, we take the case of *commercial affairs* in general, we know what a change has taken place in the transmission of intelligence relating to business within a few years past; and it would seem, too, as if every new impulse in business rendered it necessary to add new energy to our means of communication. Is it too much to suppose that the demands of business may, before a long time, lead to the establishment of telegraphic communications between our principal cities? (Mr. Pickering here refers to the old form of telegraph, by which intelligence is communicated from station to station by means of signals).

"Twelve years ago it was stated in the French papers that *three thousand* messages could be conveyed in one day from Paris to any extremity of France, and that answers could be received to them. Even since I have been preparing to meet you at this time, the question has been agitated as to the practicability of a telegraphic line, for the purpose of business, between the great seat of our northern manufactures and this city; and why may we not look forward to the time when there shall be such communication between this city and New York, Philadelphia and Washington? I dare not presume to predict such an event for some time to come: and yet, when we daily witness the extraordinary resources of this growing country—when we observe the wonderful results of an active and intelligent population incessantly occupied in developing their powers and resources, and stimulated by the circumstances in which they are placed to greater and more intense exertion than the same number of people have probably ever been—when we see, too, that all ordinary calculations, founded upon the precedents of other nations, fall short of what is here actually accomplished—when we witness all this, we cannot believe that it is being too sanguine to expect the application of the telegraph to a vastly greater extent than we have yet seen. Will it be said that the demands of business will never be such as to warrant the adoption of it, for instance, between this city and New York? For want of practical knowledge I dare not affirm that this will very soon be the case; and yet, if there are now essential advantages to business in obtaining intelligence from New York in two days, or less, or at the rate of eight or ten miles an hour, any man can perceive that there may be a proportionate benefit when we can transmit the same information for that distance by telegraph, at the rate of four miles in a minute, or in the space of a single hour from New York to Boston.

"When, therefore, we find by actual experience that this rapid mode of communication is deemed necessary to the wants of an active community, who will venture to set bounds to its application? We can, in imagination, suppose it to be on our coast from one end of the continent to the other; and if any people should ever carry it from our Atlantic shores across the continent to the coast of the Pacific Ocean, I feel the strongest conviction that it will be accomplished by our countrymen, when we may obtain intelligence from China in as short a time as it now reaches us from Europe."

His anticipations have been fully realized; not only is there telegraphic communications between New York and Boston, but it is much more rapid than his most sanguine expectations—it is not four or five miles in a minute, but many, many times that in a second.

We have, as he hoped we should have, though very likely much sooner, and on a larger scale than he expected, telegraph lines from one end of the continent to the other, and from the Atlantic to the Pacific.

If such changes have taken place in so short a time in the past, what can we expect to happen in the future? Who will venture to set bounds to its application?

European Mania for Submarine Cables.

THERE is at present quite a rage for cable telegraphs in England. Since the despondency occasioned by the failure of the first attempt to lay a trans-Atlantic wire, a reaction has set in which looks as though there may ultimately be as great a mania for this kind of investment as prevailed in the railroad market some years since. It is developing rapidly in England, and many schemes are under way. The following have all been projected this year:

	CAPITAL.
British Indian Submarine Telegraph—Suez to Aden and Bombay.....	£1,200,000
Direct English, Indian and Australian.....	2,500,000
Falmouth, Gibraltar and Malta.....	600,000
Great Northern Telegraph.....	400,000
India, Australia and China—first section, Ceylon to Penang.....	350,000
International Mid-Channel.....	25,000
West India and Panama.....	650,000

Here is a sum of £5,785,000 employed in deep sea cables, nearly all of which has been raised the present year, and to which must be added the capital of two companies engaged in manufacturing the cables.

Many other lines have been suggested, some of which are only being kept back for a favorable moment to introduce them to the public. Among these is one to connect England with the West Indies and South America, and another to compete with the present lines between this country and England, which is to be of a light character, and manufactured upon a new system. The Germans are likewise moving to have a line constructed to this country. We thus have every chance of being both efficiently and economically served with trans-Atlantic messages.

Notwithstanding the multiplicity of schemes, they are all seized upon as soon as announced, proving the existence of great faith in this kind of investment. But it may be carried too far, and already one of the London journals has uttered a note of warning. But the rage for speculation will doubtless continue, heedless of the warning, although the ruin following the bursting of the railroad bubble, but a very few years since, are not yet cleared away.

There are two difficulties that accompany these investments at this early period of ocean telegraphing. One is that the multiplicity of lines may bring the returns down to an unremunerative point, and the other that the same condition may be reached as well by those in operation as those in course of construction, by the eventual fabrication of cheaper cables, to be worked at a much lower rate than could be afforded by the more expensively constructed lines. The latter eventually must naturally occur, as manufacturing experience is gained, and both eventualities are worthy the serious attention of all inclined toward this peculiar kind of investment.—*N. Y. Com. Advertiser.*

The telegraph line from Palmer to Amherst, Mass., will soon be extended through to Grout's, and an office established in the Amherst depot, which will be a very great public and railway convenience.

[From The London Star, Sept. 27.]

Injury to the Atlantic Cable.

A FRESH injury is reported to have happened to one of the cables of the Atlantic Telegraph Company. The accident which has caused the parting of the cable has occurred about seventy miles from Heart's Content, near the locality of the former fractures of the line. The injured cable is the one laid in 1866, and which has alone suffered from the casualties. The present is the fourth fracture that has occurred in the 1860 cable on the Newfoundland side. About six weeks since a fault was also discovered in the same cable a short distance from Valentia. A steamer has been for some time past lying off the harbor, waiting for fair weather to proceed to the spot where the fault exists, to repair the damage. The cause of these fractures has not yet been distinctly stated, but there is reason to believe that the course taken in laying the cable—the latter portion having been laid in a heavy fog—was over rough sunken rocks, and that the cable has been injured by chafing upon them. The first injury to the cable off Heart's Content had every appearance of being caused by an iceberg settling down upon it. The second injury bore traces of wilful damage, and suspicion attaches to a strange craft, which, during the time of the excitement about the Fenians, was seen hovering near the spot where the rupture took place. The 1865 cable remains perfectly safe, as it is laid in a channel that was carefully surveyed. This is the cable which was lost in the attempt to lay it by the original Atlantic Telegraph Company. When the Anglo-American Company took up the work, in 1866, they were successful in their task, and having laid the cable which they had on board the Great Eastern, they returned to mid-ocean and grappled with and raised the lost cable of the previous year, which has ever since continued to work uninterruptedly, while its younger brother has suffered from not less than five mishaps. But for the singular good luck of the Anglo-American Company, which enabled them to pick up the lost cable from the bed of the Atlantic, communication with America would have been interrupted on five occasions, and each time for a considerable period. In order to provide against contingencies such as these which have just occurred, a quantity of surplus cable has been stored at Heart's Content, which may be put on board ship there and at once made available, so as to render unnecessary the delay and expense of making the voyage the whole distance across the Atlantic by the repairing ships.

Fortunately, the communication between the two countries has not been interrupted for a moment by the failure of this 1866 cable, and we are informed that the number of messages sent through on Friday last was larger than upon any day on which the line has been open for messages.

Extraordinary Phenomenon.

ON the evening of the 30th May the inhabitants of Greiffenberg, Germany, and the neighboring villages, for more than a German mile in circuit, were the witnesses of an extraordinary natural phenomenon. Between nine and ten o'clock thunder clouds seemed to be gathering around the Iser and Risenbergs, to the south, while the rest of the sky appeared to be covered only by light clouds. Now and then a few flashes of lightning were seen in the far distance. Suddenly all eyes were blinded by a fall of fire, differing both in form and color from common lightning, which was followed in four or five seconds by a deep and terrific report, like a loud peal of thunder. All the windows rattled, and the houses seemed shaken to their foundations. Those who were in the open air say that they seemed to be wrapped in fire and deprived of air some instants. A mild and moderate rain, without thunder or lightning, followed. Opinions differ as to whether the above appearances are to be attributed to a meteor or to a sudden discharge of electricity.

A TELEGRAM.

BY ETHEL LYNN.

Hark! the click of wire insensate,
Jotting viewless words of fate,
Speaking down in nimble measures,
While its eager prompters wait;
Shading light, and lighting shadows,
Stamping mottoes coldly terse;
Listen to one single message,
This—"Come quickly, mother 's worse."

Daughter May fling down thy jewels,
Bride and belle, at revel bright,
They will miss while May in sorrow
Faces home and coming night,
Night, that brings such sad to-morrows,
Always to some mourner 's rest;
Night, that may bring no to-morrow
In the land a soul has left.

Harold, close the open ledger;
Blot and blur the last amount,
Life, that gave you life, is flitting
Slowly to its last account.
Gentle Geordie, best beloved,
Leave the toll of brush and pen,
Lay the head with silver shaded
On your shoulder once again.

Wayward Will, forsake the wassall;
Stop and think as best you may
Of the love whose like will never
Meet you 'till your dying day.
Yet her patient blessing waits you;
You, whose failings others curse;
Let the words bring quick contrition,
Will—"Come quickly, mother 's worse."

Children, gather in about her,
So your meeting hands shall clasp,
Cradle her from earth to heaven,
'Till the angels bending, grasp
At her shining garments, trailing
On the path among the stars,
And before the soul triumphant
Lowered lie the crystal bars.

There is no wire electric yonder—
Where the peaceful spirits rest—
For coming ill, nor waiting message
To the soul supremely blest;
But ever still, when stars are watching,
Thrilling through the space between,
A mother seems to send her greeting
By a pathway all unseen.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

The Chicago Western Union Office and Officials
Once More.

CHICAGO, Oct. 9.

TO THE EDITOR OF THE TELEGRAPHER.

NOTHING has appeared in THE TELEGRAPHER for some time from the Western Union office here, and I think its readers should be informed how things are going on. The letters which appeared some months ago, over the signature of "Chicago operators," truthfully set forth the abuses to which operators here were subjected, and caused an unpleasant sensation among the criticised officials. Although for some time past these letters have been discontinued, in the hope that the *exposé* therein made might work a reformation, such has not proved to be the effect. It therefore becomes necessary that our case should be again presented, and I will endeavor to furnish a few additional facts in regard to the mismanagement of the Western Union Chicago office, and the indignities suffered by the employees here at the hands of the sub-officials placed over them.

An extract from a letter from President Orton to Gen. Superintendent Stager is posted up in a conspicuous place in the operating room, for the benefit of the victims of the *Great Grand Monopoly*, and apparently to aid in the misrule of the overbearing Swain, whose history, from Columbus, through Dubuque, St. Louis and other places, is not such as to commend him to the kindly feeling or confidence of those over whom he is placed. This letter reads that, "No part of the service being perfect, they must exercise skillful, vigilant supervision over the operating department."

Skillful? Pahaw! Vigilant? Bah! Coercion, truly vigorous but far from skillful, both day and night.

Every operator desires to have his place to work assigned to him, and not to be driven from place to place by the growl of the above mentioned representative of the domineering and dictatorial order of humanity. This official grants a favor so seldom, that when he does occasionally yield to such weakness, he considers it a "big thing," and even then grants it with such a bad grace that it is better to do without than to accept the favor and the implied degradation—especially from him. The time has been, but we sincerely hope has passed,

when operators here could be justly taunted, as they were by a Chicago correspondent of THE TELEGRAPHER a few months ago, with "not daring to say their souls were their own," and are prepared to assert that "their services as men are their own."

The sharp sword of "discharge" is constantly suspended by a slender thread over the heads of those unfortunate enough to be employed in this office; and this is rendered more humiliating from the fact that such officials should wield this power!

There is much room for improvement of the operating department in this office. A description of the new office has appeared in THE TELEGRAPHER, and it is therefore unnecessary to repeat it, and only a few of the more prominent failures in its construction and equipment will be noticed. A large amount of money has been expended upon it, and the result should have been more complete and satisfactory, rather than the *fiasco* which is exhibited in the accommodations for doing business, and for the health, comfort and convenience of the employees.

Have you heard of the wonderful mammoth switchboard, the idea of which lay dormant in the depths of the inventor's brain, to be projected thence by the volcanic action of his inventive genius?—John James Speed Wilson!!—whose name shall go down to posterity as the originator and inventor of the great Chicago plug switchboard! beside which the great organ of Boston must hide its diminished head, and the Coliseum become an object of minor consideration. The "PLUG" switchboard in every sense of the word. A brief description of this wonderful product of a gigantic inventive genius cannot but prove interesting to telegraphic experts.

It is composed of four divisions, each separate from the others. Each division made to contain twenty-five lines; each line to be switched twenty-five different ways on its own division. The divisions embrace the lines respectively running North, South, East and West; but the great inventive genius which culminated in this mammoth plug switch overlooked the fact that, by this switch, it was impossible to connect a northern and southern line, or a line of either division with that of any other division, until it was too late to remedy it. To obviate this difficulty, and arrange it so that the switch should not be entirely useless, three or four strips of copper have been run at right angles with each other the length of the switchboard, in the rear so that by using the screwdriver, taking out screws, and changing the lines one to the other by hand, the through connections can be made, and the switch connections worked to more extent. This switchboard cost in the neighborhood of three thousand dollars. It has 30,000 separate pieces of brass. Holes are made, and plugs, with gutta percha handles, used instead of buttons.

It is amusing to see J. J. S. W. bring his friends into the operating department, to show them this product of his ingenuity, saying, "I invented this! It is the only one of the kind in the world," &c., &c., his admiring auditors not knowing a switchboard from a local battery.

We consider here that both the switchboard and the inventor are first class failures.

This communication is becoming too lengthy for your columns, and the remainder of the story must be reserved until next week.

G. J.

The Oil Region Telegraphs and Telegraphers.

TITUSVILLE, Pa., Sept. 27.

TO THE EDITOR OF THE TELEGRAPHER.

A FEW items relative to telegraph matters in the land of derricks, and great bores, and oil wells, may not prove uninteresting to the readers of our paper, THE TELEGRAPHER.

The Western Union office here is under the management of Mr. W. P. Lucas, with Captain Jenks and Fred Loomis as assistants. Six wires are in constant use in this office, and although the hooks are generally kept clear the copy drawers are crowded. For the week ending Saturday, Sept. 25th, the paid business of this office footed up, sent, 546; received, 483. This was an uncommonly light week, too, as the "grease" business seems to be at a stand still just now, waiting to see what the result of the gold excitement in New York is to be.

This oil business is a hurrying business, and is often attended with many trials and tribulations to the poor operator. It's a rare case to take a message in at the counter which has not inscribed at the top, in very conspicuous letters, the word "rush." We make a practice of snatching the message from the customer's hand, nearly tearing it to pieces, and rush frantically to the table to rush it with all force. Our N. Y. oil business is all repeated at "Sk.," Pittsburgh office, and it's often the case through the day, while "Sk." is receiving the check to messages from us, "Fx." N. Y. office, is getting the signature, thus showing how little Capt. Fulwood, manager of "Sk.," allows business to lay there. He has

no hook holes in his messages until after they are sent, when they are filed away on hooks.

Adrian Grape is in charge of the P. & A. office at this place. They have but one man, as their business does not demand an increase of force at present.

Some of our operators in these parts are gently sliding out occasionally, and leaving little wardrobe and other bills unpaid. But this is not the fault of the boys at all; it's said to be owing to the oil making the country very "slippy," and the naturally "slip out."

An "artist of the key," working at Pleasantville, took the accustomed slip. He forgot to leave his future address, and also forgot to book any of his business for the month of September, and we believe forgot to leave little balances due the company and a few outsiders. His memory is very short. James Brady, of Greenville, Pa., office, takes charge of the office at Pleasantville under many difficulties, but he is a persevering fellow, and an old man in the W. U. Co.'s employ, and will soon straighten things up.

WHOOPESTUP.

Anxiety to hear from the Chicago and Pittsburgh Operators again.

WASHINGTON, D. C., Oct. 10.

TO THE EDITOR OF THE TELEGRAPHER.

WE have been waiting patiently to hear further from the Chicago and Pittsburgh operators. Their correspondence ceased as suddenly as it commenced, but without informing us whether their situations have been altered or not. Have they been subdued, or have they succeeded in obtaining what they desired? Has the Pittsburgh office been cleaned to the satisfaction of the operators, or have they concluded to remain in the filth which they claimed to be so injurious to health? These questions, and many more, have been asked us so frequently, with requests to ascertain, if possible, the cause of their correspondence ceasing so suddenly, that we have concluded to make the inquiry. Will some one inform us if the authors of those interesting communications are still living, and what has been the result of their publication.

Much anxiety prevails among the fraternity here to know the fate of the Chicago and Pittsburgh operators who dared thus boldly proclaim the wrongs they endured; and others outside of the Capital have made similar inquiries, but we have seen no replies as yet. Let us hear from them again.

SPRING.

Queries.

TO THE EDITOR OF THE TELEGRAPHER.

DOES the continuous "jump spark" of an induction coil conduct low tension currents, and in what degree?

At what ratio does the effective power of the several layers of wire upon an electro-magnet decrease or increase as they recede from the core?

Who was the first discoverer of the insulating properties of paraffine?

Is the iron ray in the solar spectrum deflectable by a magnet?

Is there any known device for rendering a galvanometer perfectly astatic?

Is the current of a voltaic battery intermittent? if not, the proof.

Was Voltaire the inventor of the Voltaic pile—vide Madison Buell, in the *Journal of the Telegraph*—or was it Volta?

PERSONALS.

Mr. J. H. GALE has taken charge of the Beloit (Wis.) office of the Western Union Railroad Telegraph, vice Mr. SMITH ROE, transferred to Elktown, Wis.

Miss M. E. HAMMATT has superseded Mr. J. CASTLE at the Springfield (Wis.) office of the Western Union Railroad Telegraph.

Mr. E. O. WAIT has been appointed train despatcher on the Western Union Railroad, from Sept. 5th.

Mr. FRED. LOOMIS has resigned his position in the Western Union (Titusville, Pa.) office, to accept a situation in the Washington (D. C.) office of the same company.

Mr. J. B. KEFERSTEIN has been transferred from the Walcott (Iowa) to the La Salle (Ill.) telegraph office.

Mr. J. H. BERRYMAN has resigned the position of night operator in the Western Union office at Corry, Pa., and accepted a position with the O. C. and A. Railway at Tideoute, Pa.

Mr. ARTHUR T. JONES has resigned his position on the Ogdensburg and Lake Champlain Railroad Telegraph, and is for the present located at Woodstock, Ill., on the C. and W. U. Railroad.

Mr. THOS. MORRISON, operator at the State Department, Washington, D. C., who has been absent on leave for the past month, has returned to duty.

Mr. J. W. KATES, Superintendent, visited Washington during Saturday and Sunday, Oct. 9th and 10th.

Mr. R. T. J. FALCONER, operator W. U. office, Washington, D. C., has resigned his position, to take effect 15th Oct., to accept a clerkship in the Treasury Department.

Mr. JOHN CASSIDY has accepted a position with the Franklin Co., Washington, D. C., vice E. D. CUDLIP, removed.

Mr. A. J. LOMBARD, lately combination operator in W. U. office, Washington, D. C., has engaged in the tobacco and cigar business.

Mr. GEO. SEIBERT, of the 145 Broadway (N. Y.) Western Union office, is absent on sick leave.

Mr. GRAMZON, of Syracuse, has taken a place in the 145 Broadway (N. Y.) W. U. office.

Mr. MILROY C. BAGLEY, of the Western Union office, 145 Broadway, N. Y., has exchanged situations with Mr. STEWART, of the New Orleans office.

Messrs. C. DWYER and WM. J. LANDY have resigned from the 145 Broadway (N. Y.) office, and gone to the St. Louis (Mo.) office of the same company.

Mr. CHARLES MIXER has resigned from the Western Union (Chicago) office, and taken a position in the Vicksburg (Miss.) office of the same company.

Mr. HOVEY has also resigned from the Chicago Western Union office, on account of ill health.

Mr. EDWARD WAY, for several years past operator at the West Albany machine shop, has resigned his position and accepted one in the motive power department N. Y. C. R. R.

Mr. A. E. CLARK, late night operator in "Da." Albany office, is his successor.

Mr. A. G. SANDERLIN, operator at Delavan House, Albany, is off on three or four weeks' vacation. His place is being filled by E. G. SILLECK, of Peekskill.

Mr. W. T. KING has resigned his position in the Cincinnati (Ohio) Western Union office, to accept an appointment on the editorial staff of the *Chronicle*, of that city.

Mr. S. T. DAVIDSON has resigned from the Western Union (Cincinnati, Ohio) office, to take a situation on the night force at the St. Louis office of the same Company.

Mr. P. HENRICH, from California, has accepted a situation in the Western Union (Cincinnati, Ohio) office.

Mr. A. BOMERSACK, of Camden Station, Baltimore, Md., has taken a situation in the Western Union Cincinnati office.

Mr. O. S. SUMMERS, Superintendent of the I. C. and L. R. R. Telegraph, has resigned, to take a place in the office of General Superintendent STAGER, at Chicago, Ill.

Mr. W. A. STANTON, of the P. and A. Philadelphia office, has taken a place in the Western Union Cincinnati office.

Mr. J. M. SPENCER has resigned from the Western Union Cincinnati office, to commence the practice of law at Rising Sun, Ind.

Mr. E. D. WINTERS has resigned from the Western Union Cincinnati office and gone to Montgomery, Ala.

Mr. E. P. BAKER has resigned from the Western Union Cincinnati office and gone to Selma, Ala.

Mr. ADAM SPROUL, of the R. and A. Pittsburg office, takes the situation in the Western Union Cincinnati office resigned by Mr. BAKER.

Mr. J. P. JENKINS, Jr., of Columbus, Ohio, takes Mr. WINTER's place in the Western Union Cincinnati office.

Mr. STEARNS, of Chicago, has also accepted a situation in the Western Union Cincinnati office.

Mr. J. E. REEVES has been appointed superintendent of telegraph and train despatcher on the L. C. and L. R. R., a new road.

Gen'l Supt. STAGER, of the Western Union Company, accompanied President ORTON to California.

Mr. CYRUS W. FIELD is on a trip to the Far West, and will, it is understood, go as far as Cneyenne, on the Union Pacific Railroad.

Mr. FRANK DRUMMOND is Manager, and Mr. J. S. CUNNINGHAM Secretary and chief operator of the People's Telegraph Company, at Montreal, Canada.

Mr. THEL. PHILIPS has been transferred from the Greensboro to the Tuscaloosa (Alabama) Western Union office.

Mr. WOLFFE, formerly of Demopolis, Alabama, succeeds Mr. PHILIPS at Greensboro.

Mr. W. W. PAYNE, of Laurel, Ind., has been appointed Superintendent of Telegraph of I. C. and L. R. R., in place of Mr. SUMMERS, resigned.

THE TELEGRAPH.

Transfer of the Mississippi Valley Lines.

A St. Louis correspondent writes us, under date of Oct. 7th, that the lines of the Mississippi Valley National Telegraph Company were transferred to the Pacific and Atlantic Telegraph Company, in completion of the sale made to that company on the 23d of Sept. Mr. Charles H. Haskins, the former Superintendent of the M. V. N. T. Co., remains in charge as Supt of that division of the P. & A. Co.'s lines. The connection of the M. V. N. T. wires with the P. & A. wires will be made in a few days in Chicago, and the P. & A. Co. will then have the longest independent line in the United States.

Vale Spencer.

MR. SPENCER, night operator at the Western Union Telegraph office, has been transferred to the Nashville and Decatur Railroad Depot. He is a first class man at his business, and we only hope that the Nashville newspapers will be served as well in future as they have been under the superior manipulations of the retiring operator. Good-bye! we regret to lose one who has gladdened us so oft with "30."—*Daily Press and Times, Nashville, Tenn.*

Telegraphic Money Orders.

ENGLAND is about to introduce the Telegraphic Money Order System now in use in Belgium and Switzerland. The method of transmission is similar to the Post-office system. The sender fills up two blank forms, stating the sum to be forwarded, hands them to the postmaster, who stamps one of them and returns it. The sender then presents his stamped card at the telegraph office, the dispatch is transmitted, and the receiver presents the telegram at the distant post-office, upon which he receives the money.

Reduction of Tolls.

THE Western Union Company, on Thursday, Oct. 7th, reduced the tolls on messages between Chicago and Milwaukee to ten cents for ten words, and a cent each for additional words. This is done for the purpose of running off the Great Western Telegraph Company, which has been lately extending its lines quite rapidly, and is evidently getting to be regarded by the Western Union as likely to become troublesome.

The Fault in the French Cable.

A FAULT has been discovered in the French cable at a point 800 miles from St. Pierre and 1,000 miles from France, which, though not at present sufficient to prevent its working, is constantly growing worse, and will ultimately require the cable to be undern all the way from one coast or the other to the spot where the fault exists. This great and costly task is to be undertaken next summer.

Additional Western Union Wires.

THE Western Union Company have just completed a new wire from Albany to New York, which is to be kept exclusively for the use of the N. Y. C. R. R. It only enters the Exchange building, Albany, and 239 Broadway, New York.

The Western Union Company have also recently completed a new way wire from Poughkeepsie to New York.

"A Truly Hibernian Blunder."

UNDER this heading the *Yorkshire Post* has the following: "For some days past the following notice has been exhibited at the door of the Magnetic Telegraph Company, Commercial buildings, Leeds:—'Reduction of rates: 30s. to America.' One might have fancied that, even in the absence of a free library in Leeds, the mistake could hardly have been made of supposing that these simple words referred to anything beyond a 'cable' message. An amusing blunder, however—such, perhaps, as only an Irishman could commit—has shown that such a double reading is possible. On Saturday the intimation attracted the attention of an immigrant from the Green (!) Isle, who, with characteristic impulsiveness, jumped to the conclusion that for the exceedingly moderate sum of 30s. he could be shipped across the Atlantic. On the Sunday he lost no time in calling together such of his neighbors as were favorable to changing the scene of their labors, and as soon as they heard his wonderful story they at once decided to turn their impediments into hard cash, and set out without loss of time for the Far West. Acting upon this decision, on Monday morning, to the no small astonishment of the Magnetic Company's officials, an Irishwoman presented herself at the office, and in tones of the richest brogue inquired for 'further particulars' (which the

notice had promised) of the 'chape passage to Amerikay.' The officials, restraining as far as was possible the impulse to give vent to their sense of the ludicrous, explained to her the mistake she had fallen into, but for some time without success; and when at length she was induced to quit the premises, it was with an unmistakably incredulous expression, as if she felt an attempt was being made to confine to a few what should be open to all."

An English Substitute for Telegraph Extension.

It was stated, in the accounts of the Oxford-Harvard boat race, that a part of the time between the finish of the race and the announcement of the result in this country was occupied by a messenger in carrying the despatch on horseback to the Mortlake telegraph station. This was incorrect. The despatch was carried to the office by a very fast runner in the service of the Electric Telegraph Company, who is employed on all important occasions by the intelligence department, on account of his reliability and great speed. His name is Lewington, and he is known in the service as "Electric Jack." On the occasion of the prorogation of Parliament he ran with the copies of the Queen's speech from Westminster to the chief telegraph office in Moorgate street in 14½ minutes—a very fast performance, considering the crowded state of the streets during the middle of the day.

In this country, on such an occasion, the telegraph wire would have been extended to the locality, but we presume this would be too much enterprise for our English friends.

[From The Scientific American.] Spectrum Lines of Aurora.

MESSRS EDITORS:—During these times of auroral abundance our Canadian skies frequently present interesting scenes. Shortly after midnight, on the morning of Sept. 3d, aurora borealis hung over us, waving like luminous canvas floating in the breeze, and forming a brilliant corona near the star Scheat, in Pegasus. The light seemed to flow in two currents, the uppermost remaining quiet, and the lower current changing with great rapidity.

On this occasion I submitted the aurora to careful spectrum analysis, and am happy to report an observation made with the spectroscopic, which may help to settle the question of the nature of polar light. I succeeded in obtaining a distinct spectrum, consisting of one very bright line in the yellow and one faint line in the green. The bright line was close to the sodium line D, and coincident with an air line in the solar spectrum. The dim line in the green I could not identify as belonging to any known substance.

The conclusions resulting from the identification of the bright line in the spectrum of aurora are important, showing polar light is principally incandescent oxygen gas.

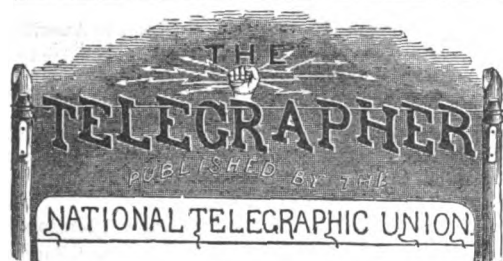
The presence of this gas in excess, in regions traversed by aurora, may result from the decomposition of water, the electric currents affecting the separation and rendering the oxygen luminous. The re-union of oxygen and hydrogen form water again, which is visible as a turbid atmosphere, noticeable during auroral displays. But it may be asked, why do not the lines of hydrogen appear in the spectrum of aurora? The answer is, because its temperature is not sufficiently high to render the gas incandescent. In a partial vacuum oxygen is luminous at a lower temperature than hydrogen, because of its density, which is sixteen times greater, and still increased by the continuous passage of electric currents.

Another question that may arise is this: Why does the air line in the spectrum of aurora appear bright, while the same line in the solar spectrum is black? An explanation is found in the fact that there is no sufficient absorbing medium between the aurora light or luminous oxygen and the earth, while the solar line is seen after absorption by its passage through a deep luminous stratum of the earth's atmosphere.

D. K. WINDER.

Toronto, C. W.

THE Earl of Rosse is making a series of experiments, by means of a thermo-pile of four elements and a 3-foot telescope, to determine, if possible, what proportion of the moon's heat consists of: 1. That coming from the interior of the moon, which will not vary with the phase; 2. That which falls from the sun on the moon's surface, and is at once reflected regularly and irregularly; 3. That which falling from the sun on the moon's surface is absorbed, raises the temperature of the moon's surface, and is afterwards radiated as heat of low refrangibility. The chief result arrived at up to the present moment is that (the radiating power of the moon being taken as equal to lampblack, and the earth's atmosphere supposed not to affect the result) a deviation of 90° for full moon appears to indicate an elevation of temperature=500° Fah. The relative amount of solar and lunar radiation was found=89819: 1.



SATURDAY, OCTOBER 16, 1869.

J. N. ASHLEY,.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.

Vice-President. W. O. LEWIS....New York.

Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.

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Corres. Sec....F. L. POPE....Box 6010 P. O., N. Y.

HOW IT WORKS.

In the last number of THE TELEGRAPHER the statement was published that the Atlantic and Pacific Telegraph Company had filed a bill in the Supreme Court at Chicago, Ill., for an injunction against the Miss. Valley National Telegraph Company, the Pacific and Atlantic Telegraph Company, and W. C. BALDWIN, to restrain the Miss. Valley Company from giving possession of its lines to the P. and A. Company, under the recent sale, on the ground that a contract was made in October, 1868, with the Mississippi Valley Company, for twenty years, to exchange business and to protect each other, &c.

The Atlantic and Pacific and Pacific and Atlantic Companies control very important sections of the competing lines of the country. Instead of working together to secure the successful establishment of a general competing system, which the country needs and demands, they have developed a rivalry very unfavorable to their interests and the interests of the country. It is not sufficient that they have the extensive and powerful Western Union Company to compete with, under very disadvantageous circumstances, but they must needs seek to injure and defeat each other. When every dollar of capital obtainable and of their earnings is needed to maintain themselves against their great antagonist, the Western Union Company, they must fritter away their means in lawsuits, injunctions, and other efforts to hamper and destroy each other.

No better argument for a consolidation of the competing telegraph interests of the country, which we have persistently advocated, is possible than that furnished by the suicidal efforts of these two companies to destroy each other. We will not indicate where the fault in this particular instance rests. The action referred to is probably what must be expected while these companies continue to occupy their present antagonistic position.

We desire to make this the occasion of a renewal of our recommendation to the competing telegraph interests of the country to combine and consolidate their means and efforts for the establishment of successful telegraphic competition. If the managers of competing companies have yet any doubts of the difficulties they have to overcome, they will find the recent annual report of the President of the Western Union Company interesting and profitable reading. We can tell them, what their experience should have already sufficiently taught them, that they have all they can possibly accomplish, with united and friendly combination, to sustain themselves against that Company.

With such a combination, and intelligence, economy and honesty in the extension of their telegraph system, they can successfully maintain themselves. Without

these, it is only a question of time when the fate of the Atlantic and Pacific States and the Miss. Valley Company shall overtake them.

Telegraph lines can no longer be built and maintained under the system of wasteful expenditures and inefficient construction, for the sole benefit of contractors, which have to so great an extent characterized telegraphic enterprises in this country. The lines *must* be honestly constructed for the benefit of the stockholders, or their continued existence outside of the Western Union combination is impossible.

Nothing can possibly afford greater satisfaction to the managers of the Western Union Company than the policy under which the competing companies have been built and managed. The result is as certain and demonstrable as a mathematical proposition. The policy of the Western Union Company is aided by the existence of a number of competing companies, with diverse and conflicting interests, which, while unable themselves to build up and establish a national telegraph system, keep others from occupying the field. While this state of things continues the monopoly of the Western Union Company is practically assured.

Will not, then, the managers of these companies be wise in time, and by union of interests and efforts, and by an honest, intelligent and economical extension of their lines, give the public assurance of needed and effectual competition? We once more commend this matter to their immediate and earnest consideration, in the hope that they will act at once and for the best interests of their stockholders and the public.

The Insurance Bureau.—A Member Deceased.

SINCE the action of the Annual Convention dissolving the Insurance Bureau was made public, a claim has been made upon Mr. WHIPPLE, the Actuary, on behalf of the family of Mr. JAMES C. OATES, a former member, who, it appears, died of sun-stroke at Winnsboro, S. C., on the 24th of August last, leaving a widow and two children in a penniless condition.

Of course, as Mr. OATES' death took place before the action of the Convention dissolving the Bureau was had, his family is entitled to the benefit of his insurance. This will reduce the value of the certificates to one dollar, and we will continue to receive them at that rate for subscriptions to THE TELEGRAPHER. Those which have already been forwarded to us will be credited accordingly.

We presume that no subscriber to the Bureau will regret that so much of the funds contributed have served to aid the widow and orphans of a deceased telegraphic brother in their time of trial and affliction.

A Small Business.

We understand that the great Western Union Telegraph Company is constantly guilty of a very small piece of business. For instance, a message is sent from New Orleans, addressed to Fifth street, in this city. It comes here, through an error of an operator, addressed to Fifth street. It is telegraphed from the main office to the New York Hotel office, and sent to the erroneous address. Of course, no such person is to be found there. The true address is then hunted up, and the manager of the receiving office is directed to forward it to the Forty-second street office, adding the city line tariff to the charges, which is done. This is a clear case of profiting by its own wrong, which no company should be guilty of.

Will not the managers of the Western Union Company look into and correct this wrong? To be sure the amount involved in individual cases is small, and the shave is submitted to by customers rather than spend the time necessary to have it corrected. The principle involved, however, is the same as though the amount were dollars instead of cents.

THE Russian Government proposes to connect Odessa and Constantinople by a submarine telegraph cable.

The American Institute Fair.

In consequence of the unexpected absence of F. L. P. we are compelled to postpone, until next week, the continuation of the account of the electrical and telegraphic department of the American Institute Fair, now being held in this city.

Application for Injunction Dismissed.

In New York a legal injunction is considered the *panacea* for all difficulties. Having faith in injunctions, the Cleveland Fire-Alarm Company has sued the Board of Metropolitan Fire Commissioners of the Metropolitan Fire Department, Chas. T. Chester and J. N. Chester, and a motion was made before Judge Clerke for an injunction to restrain the defendants, during the pendency of the action, from proceeding, under the recent contract for the construction of a new Fire-Alarm Telegraph system for this city.

The plaintiffs allege that their bid was lower than that of C. T. & J. N. Chester, to whom the contract was awarded. The plaintiffs further allege that, being the lowest bidders, they were entitled to the contract, and, therefore, entitled to the injunction. The injunction is asked for, also, on the further ground that the present system is imperfect, unreliable, and unadapted to the department, while they (the plaintiffs) are prepared to furnish, at a less cost, a perfect system, and one in all respects adapted to the use of the department.

The defendants set up in their answer and numerous affidavits that their system, as now used, is the result of the best minds on telegraphy for the last twenty years; that it embraces the best features of fire-alarm used in the chief cities of the United States and Canada, and that the plaintiffs cannot build or construct such a perfect and reliable system of fire-alarm telegraphy as the defendants. They further deny every imputation of unlawful understanding, combination or arrangement between Gamewell & Co., themselves and the Fire Commissioners, as charged in the affidavits of the plaintiffs.

The motion was argued at great length, the defendants claiming that the offer of the plaintiffs was not for the same thing as the Chesters had offered, and as they desired; that the offer was in some respects elusive, as plaintiffs had no power to fulfil all their offers, owing to patents in the hands of the Chesters, and that the Board had discretion in accepting or rejecting such bids.

On Tuesday last Judge Clerke delivered an able opinion, holding that the right and power of the Fire Commissioners to make the contract with the Chesters was perfect, and concluded as follows:

"Even where a statute declares that contracts shall be given to the 'lowest bidder,' it cannot be held that these words should be construed literally and accepted as an absolute restriction. In such case, undoubtedly, the bids should be *bona fide*, and should conform strictly to the prescribed specifications; but, in determining whether a bid is the lowest of several others, the quality and utility of the thing offered—in other words, its adaptability to the purpose for which it is required—must be first considered. The offer in nominal amount may be exceedingly low, while the thing offered may be exceedingly worthless. It may be apparently cheap while really dear, and much dearer and much less adapted to the required purpose than other offers, in which a much larger amount of money was required. If the commissions were restricted to the lowest bid they would be bound to consider which of the telegraphic systems submitted to their consideration would ultimately cost the city the smallest amount of money, and which would be the most effectual and most desirable for use. In the exercise of their judgment in this matter they have decided that the system—the American fire-alarm telegraph system—which they have adopted is cheaper at \$426,156 than that of the plaintiffs' at \$275,000. In fact, they are sustained by the sworn opinions of several experts; among the rest, by that of the renowned inventor of the telegraph. This right of independent judgment they observed in their advertisement, expressly notifying all that 'they would reserve the right to reject any or all proposals which, in their judgment, do not embrace a perfect and reliable system.'"

The motion is denied, with costs.

New Patents,

For the week ending Oct. 12, and each bearing that date.

ELECTRICAL FIRE-ALARM THERMOMETER.—John H. Guest.

I claim an electrical fire-alarm thermometer, formed with the expansion tube bent at an angle to the bulb, so as to be inserted in the ceiling, and fitted with the platina conducting wires, as and for the purposes set forth.

BORN.

TINKER.—To Mr. CHARLES A. TINKER, manager of the Western Union Washington, D. C., office, Thursday, Oct. 7, a daughter.

DIED.

PENNINGTON.—At Harrisburg, Pa., on Sunday night, Oct. 10, of consumption, GEORGE MESICK PENNINGTON, operator in the office of the Pacific and Atlantic Telegraph Company, aged 19 years.

CODY.—At Memphis, Tenn., Oct. 13th, W. H. CODY, manager of the Western Union Telegraph office.

OHIO RIVER TELEGRAPH

Connects with Western Union Lines at Louisville, to all points in this or any other country.

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LOUISVILLE, Ky.,	NEWBURG,
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LEWISPORT,	GRAND VIEW,
BOCKPORT,	OWENSBORO,
	and EVANSVILLE, Indiana.

N. M. BOOTH,

Superintendent.

POPE, EDISON & CO.,
ELECTRICAL ENGINEERS,

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will be the application of Electricity to the Arts and Sciences.

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for Special Telegraphic Service will be designed, and their operation guaranteed.

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CONTRACTS

for the Construction, Re-construction and Maintenance of either Private or Commercial Telegraph Lines will be entered into upon just and reasonable terms.

VARIOUS APPLICATIONS OF ELECTRICITY.

Special attention will be paid to the application of Electricity and Magnetism for Fire-Alarms, Thermo-Alarms, Burglar-Alarms, etc., etc.

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We possess unequalled facilities for preparing Claims, Drawings, and specifications for Patents, and for obtaining prompt and favorable consideration of applications for Patents in the United States and Foreign Countries.

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Attention will be paid to the construction of Experimental Apparatus, and experiments will be conducted with scientific accuracy. Parties at a distance, desiring Experimental Apparatus constructed, can forward a rough sketch thereof, and the same will be properly worked up.

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Telegraph Wire, Cables, Instruments, Insulators, Scientific and Electrical, and Electro-Medical Apparatus, Telegraph Supplies of all descriptions, Telegraphic and Scientific Books, etc., will be purchased for parties favoring us with their orders, and forwarded by the most prompt and economical conveyance, and as cheaply as the same could be purchased by our customers personally. Our facilities for this business are unexcelled.

Letters and orders by mail should be addressed to

Box 6010, P. O., NEW YORK.

AMERICAN FIRE ALARM

AND

POLICE TELEGRAPH,

GAMEWELL & CO., Proprietors,

104 Centre Street, N. Y.

This system of Fire Alarm Telegraph, with a central office, or upon the

AUTOMATIC PLAN,

is now in operation in the following cities, to which reference is made for evidence of its great superiority and value, and UNIFORM reliability:

BOSTON,	PORTLAND,
CHICAGO,	ST. JOHN, N. B.,
PHILADELPHIA,	HARTFORD,
CINCINNATI,	TROY,
ST. LOUIS,	NEW HAVEN,
BUFFALO,	ROCHESTER,
BALTIMORE,	SPRINGFIELD,
MOBILE,	TOLEDO,
NEW ORLEANS,	ALBANY,
PITTSBURG,	COLUMBUS,
LOUISVILLE,	LAWRENCE,
ALLEGHENY,	MILWAUKEE,
MONTREAL,	SAN FRANCISCO,
QUEBEC,	CAMBRIDGE,
	WASHINGTON, D. C.

THE DISTINCTIVE FEATURES OF THE

AMERICAN

FIRE ALARM TELEGRAPH

are a Combination of Circuits, the Automatic Signal Boxes, Electro-Mechanical Bell and Gong Strikers.

THE AMERICAN FIRE ALARM AND POLICE TELEGRAPH is covered by some twenty patents. Very early after its introduction into Boston, GAMEWELL & Co. purchased the original patents of FARMER & CHANNING, and during the past fifteen years have spared no expense or pains to improve and perfect this system.

Any information desired in regard to the above system will be cheerfully and promptly furnished upon application at the office. A pamphlet, setting forth more fully its advantages and superiority, has been printed, and will be supplied to Municipal Authorities and others interested in Fire Alarm and Police Telegraphy, upon application as above.

CHESTER, PARTRICK & CO.,
TELEGRAPHIC

AND

ELECTRICAL ENGINEERS,
CONTRACTORS, etc.,

88 South Fourth Street Philadelphia,

Manufacturers of, and dealers in every variety of

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INDUCED AND DIRECT CURRENTS;
ELECTRO-PLATERS' BATTERIES AND MATERIALS,
ELECTRO GONGS, OF ANY DESIRED SIZE OR WEIGHT,
ALARM APPARATUS,
PATENT APPARATUS FOR THE MANUFACTURE OF NITRO-GLYCERINE, ELECTRICAL CLOCK WORK,
&c., &c., &c.

They guarantee to give satisfaction to all who favor them with orders, in the promptness of execution and in the quality of articles supplied.

Also, have on hand and for sale,

MODERN PRACTICE OF THE ELECTRIC TELEGRAPH.

BY

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Manufacturers of

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OF EVERY DESCRIPTION.

Glass Insulators, Brackets, &c.

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Hill's Patent Galvanic Battery.

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Agents for pure Nitric and Sulphuric Acids, manufactured

by the Lodi Chemical Works.

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" Gutta-Percha covered Wire and Cables American Manufacture.

" the best Manufacture of Plain and Galvanized Iron Wire.

" of American Compound Telegraph Wire Co.

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OF

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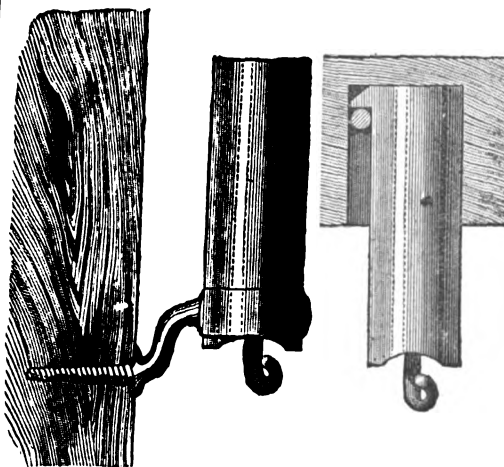
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Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-160th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same.

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THE TELEGRAPHER.

JOURNAL OF ELECTRICAL PROGRESS.

Vol. VI.—No. 9.

New York, Saturday, October 23, 1869.

Whole No. 171.

[Written for THE TELEGRAPHER.]

THE AMERICAN INSTITUTE FAIR. ELECTRICITY AND ITS APPLICATIONS. II.

HAVING in the previous article briefly mentioned the various articles on exhibition, of interest to the electrician and telegrapher, it remains to give a more particular description of them, with a view of calling attention to such as present features of novelty and utility, rendering them worthy of appreciation and adoption. Passing down the central aisle from the entrance, a table on the left, a short distance from the entrance, contains the few strictly telegraphic articles on exhibition. Among the novelties the first place must be accorded to the exhibit of

THE AMERICAN COMPOUND WIRE COMPANY,

of No. 234 West Twenty-ninth street, New York city, consisting of a coil of telegraphic line wire, together with an improved form of lightning conductor, and a submarine cable on a new principle of construction. The readers of THE TELEGRAPHER have already become somewhat familiar with the merits of that most valuable improvement in practical telegraphy, the compound line wire. This consists of a steel wire, covered with a band of the purest copper, laid on in a long spiral, by accurate machinery, the outer surface being afterwards thoroughly tinned, to preserve it from the action of the atmosphere. This forms a conductor of far greater strength and durability than galvanized wire, and whose weight is only thirty per cent. of that of iron wire of corresponding conductivity. The advantages of this invention will be apparent upon consideration, only one third to one half of the ordinary number of poles and insulators being required per mile to secure an equal degree of strength in construction, and the insulation is improved in a corresponding degree, owing to the diminished number of points of leakage. This wire has rapidly grown in favor among telegraphers since its introduction, and if it stands the test of time, of which there can be little doubt, it can scarcely fail to become universally used as a conductor for telegraphic lines. It bids fair to take rank as one of the most important improvements ever introduced into our telegraphic system. The compound lightning rod shown is composed of several strands twisted together, weighing 1,413 pounds per mile, and is constructed upon a plan similar to the telegraph line wire. A small piece of submarine cable is exhibited, composed of seven compound wires twisted into a strand (six laid round one), giving twice the conductivity of the Atlantic Cable at one half the weight and cost. The tensile strength of this cable resides entirely in the core, and no other armor is required for this purpose except as a protection in shallow water.

Near by is a glass case filled with telegraphic apparatus, from the well known manufactory of

C. WILLIAMS, JR.,

of 109 Court street, Boston. Mr. Williams exhibits two relays, two sounders and a register, as well as half a dozen keys of different patterns. There is, of course, nothing especially new in principle about these instruments; but in point of elegance of design, and beautiful and accurate workmanship, they cannot be surpassed by the productions of the best European workshops. These are, beyond question, the finest instruments which have ever been publicly exhibited here. As designers of apparatus American workmen are in advance of those of Europe, but they generally fall behind in point of accuracy of workmanship, especially in the nicer details. But the manufacturers themselves cannot be greatly blamed for this result, as long as telegraph and railway companies insist on having the cheapest instruments it is possible to produce, regardless of quality or performance. This fact renders poor work, set off with a glitter of superficial polish, the most profitable style of production, and it is

not surprising that we see so few really good instruments when we take these facts into consideration. Telegraphic mechanics, like other people, work to make money, and when ill constructed and worse finished instruments become unsalable they will cease to be produced. Some manufacturers, especially Messrs. TILLOTSON & Co., of this city, have introduced labor saving machinery, which cheapens the cost of production materially, without necessarily detracting from the quality of the instruments manufactured. This is a movement in the right direction, but has scarcely been practicable until within a few years, owing to the limited demand which existed for telegraphic manufactures.

Next to Mr. Williams' case we find another containing a number of instruments from

WILLIAM E. DAVIS,

of 319 Newark avenue, Jersey City. The instruments shown consist of keys, relays and sounders, all of which are of somewhat novel construction. The key is provided with a self-closing attachment, which is better than any hitherto brought out—"for those who like that kind of key." Most operators prefer an ordinary key, with the spring taken out, for a self-closer. Mr. Davis' magnets are wound on a novel plan, each layer of wire being carried through both spools before the next one is wound over it, and he claims that this method of winding increases the sensibility of the magnet—a matter susceptible of being readily tested with the proper apparatus. The relays have their armatures suspended like a pendulum, and close the circuits by striking and pressing two springs together, which are not electrically connected with the other portions of the instrument. The sounder is arranged so that the lever strikes upon a hollow drum of vulcanite, with a brass head, which gives a sound of peculiar distinctness, especially among a number of other instruments. The case contains one combination set, placed upon a single base. The workmanship and finish of the instruments are good.

This completes the list of telegraphic apparatus on exhibition, unless we include the office established in the centre of the building by the Western Union Company, at which messages are taken in for everywhere and elsewhere. The office is in charge of Miss Frank S. Turner, an experienced and expert operator, and is generally surrounded by a crowd of interested spectators, gazing intently upon her deft and skilful fingering, who finally turn away, one by one, with a long drawn breath, remarking, "Well, I never could understand how they do that, if I should stand here for ever!" We who have studied it for years, and consider ourselves posted, can easily understand "how they do it," but, alas! we must humbly confess, after all, that we do not know "how it is done." F. L. P.

[Written for THE TELEGRAPHER.]

The Combination Printing Telegraph Instrument.

A BRIEF statement of facts, in relation to the Combination Printing Telegraph Instrument, may be of interest to telegraphers and the public. The Printing Telegraph has always been a favorite with the public. Other things being equal, the Printing system is generally preferred by those having occasion to use telegraphic facilities.

The beauty and simplicity of the Combination Instrument (so called because it combines the best features of the House and Hughes Printers with the valuable additions and improvements of Mr. George M. Phelps, whose superior electrical and mechanical genius is well known), its certainty and rapidity of operation, commend it to public favor and approbation.

The expense of the instrument has prevented its being as generally used as the Morse, and besides, the latter has been found more advantageous on long circuits and those having a large number of offices.

The patents, as yet unexpired, are owned by the Western Union Company, and the Printers are used only by that Company.

At present five Printing circuits are worked—two from New York to Boston, Mass., two from New York to Philadelphia, and one through circuit from New York to Washington. Until recently another circuit was worked from New York to Albany, N. Y., but the operator at Albany having resigned, the circuit was temporarily discontinued. Ten Printing operators are employed, at an average salary of \$115 each per month. The motive power employed has been furnished by a rotating wheel and gearing, propelled by manual labor, requiring as many men for the purpose as operators. Mr. George M. Phelps has invented an improved Printer, for which the motive power is furnished by electricity. This was very thoroughly and satisfactorily tested on the Western Union lines, but has not as yet been permanently adopted by that Company.

The Printing circuits, except between New York and Washington, are usually closed at five, P. M., there not being enough operators to work them nights. There has been of late years so little employment for Printing operators that their number has been very much reduced, and there has been little inducement for new men to learn the business.

The rapidity with which these instruments operate enables them to transmit a large amount of business. It is understood that the number of messages sent and received daily on these five circuits approximates three thousand. While the expense of working a Printing circuit is somewhat more than that of a Morse, the extra amount of business transacted will more than compensate for the extra expense. The Morse operator who accomplishes from two hundred to three hundred messages a day, on a single circuit, may justly feel satisfied, and has, unquestionably, well earned his salary.

Printing operators are confident that the Combination Instrument will work in all weathers, between Boston, New York and Washington, *without repeaters*, as well as the Morse. When time is lost from inability to work (which is seldom), it is mainly attributable to the defective insulation of the wires employed, which can only be worked by any system through the aid of repeaters.

It is to be regretted that the inducements offered in telegraphy to first class operators, Morse as well as Printing, are insufficient to retain their services. The columns of THE TELEGRAPHER almost weekly record the retirement of one or more of the best operators, to engage in other pursuits. Hard work, and in some offices rough and ungentlemanly treatment from the officers, combined with insufficient remuneration, are constantly depleting the ranks. WARREN.

A Character.

On the eastern shore of the Chautauqua Lake lives an old man named Downs or Drowns, who in all respects is a singular character. He has resided near his present quarters for nearly 40 years, and of late years in a small hut of his own building, ill constructed and wretchedly provided with home comforts.

Inquiry as to nativity brings the positive assurance that he "was born in the planet Jupiter, and came to this little footstool by order of Jupiter himself, bringing with him the material for and the invention of the Electric Telegraph." He claims that Professor Morse stole from him the "science of telegraphing," and that by-and-by the people will find out this fact and do both parties justice. Soon after he left the planet Jupiter a rebellion broke out, and scores and scores of rebels were hurled out, and came hither, and these are watching him, with a view of getting "free passage" back. Rebels in the planet Jupiter, he says, are summarily dealt with. When proven guilty they are bound hand and foot, their

heads shaven, ears cut off, and thus marked, they have immense quantities of electricity applied to their great toes, and so equipped they are thrown over the battlements of Jupiter and go thence to North Carolina, or somewhere along the Atlantic coast, and become telegraph operators. — *Chautauqua Co. Press.*

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Steel Wire and Double Transmitters on the Pacific Coast.

SACRAMENTO, CAL., Sept. 28th.

TO THE EDITOR OF THE TELEGRAPHER.

In that portion of "Bear Valley's" communication which appears in THE TELEGRAPHER of September 18th, relative to steel wire, we find several erroneous statements. He places the breaking strain at 2,000 pounds, and that of No. 7 at 2,200 pounds—both incorrect. The former should be increased at least six hundred pounds, and the latter decreased nearly if not as much. We have not the exact figures for No. 7, but good authority puts it below 1,500 pounds. But the question of their comparative strength should not be considered, for even if it is as strong, or stronger than the steel wire, its immense size would render its use impracticable.

Let any one, who has been on the mountains during the winter, imagine a No. 7 wire telegraph line. The idea could originate with no one but a man having "Bear Valley's" experience in the construction of telegraph lines. A comparison of size will show the absurdity of such a proposition. The diameter of the steel is to the diameter of No. 7 as .09 is to .14, and the surface as .28 is to .44; and weight is in the same proportion.

"Bear Valley" does not seem yet to understand that the object is to obtain a small wire possessing great strength, even at the expense of reduced conductivity. Does he imagine that there is any one connected with telegraphing who is ignorant of the relative resistance of iron and steel wire?

Mr. Farmer's "Notes on Telegraph Construction" cannot be taken as a reference, when we consider under what circumstances the steel wire is being used. A special paragraph, devoted entirely to the section in question, would be required before you could, with fairness, refer me to his articles. When he speaks of the superiority of iron over steel wire, and tells us that the compound is preferable to either, without a doubt he refers to ordinary lines, not to such an exceptional case as this. For a line between New York and Chicago, St. Louis or New Orleans, this wire would not be desirable. Every one understands that.

"Bear Valley" tells us we will hear from him again if your correspondent replies to his last communication, and threatens a "history" of the local battery, instrument connections, &c., in the Sacramento office of the C. P. R. R. "Grass Valley" fails to recognize the picture. His business is neither erecting batteries nor cleaning them, neither has he anything to do with connecting instruments, nor does he do the testing. "Grass Valley" makes dots and dashes for his daily bread, nothing more. Your "history," whatever it may be, would not affect him.

The paragraph referring to "Double Transmission" contradicts "Bear Valley's" former statement. From his letter of July 24th we quote: "A system of double transmission, invented by S. D. Field, has been recently introduced on the lines of the Western Union Co., between this city (San Francisco) and Sacramento, &c. It is proposed to work one line from San Francisco to Salt Lake by this system." Regarding this, "Grass Valley" wrote: "As an experiment, an instrument, &c., was put in at San Francisco and Sacramento (they called it Field's Double Transmitter), but the result was far from being satisfactory."

In his last communication he "arrives at the assertion that double transmission, introduced on the lines of the A. and P. S. Co., proved a failure. This assertion is a downright falsehood, as the system worked well, and was only discontinued on account of an insufficiency of business to demand its introduction between any two of the A. and P. S. Tel. Co.'s stations."

Notice his two statements: "Introduced on the lines of the Western Union Co. Discontinued on account of an insufficiency of business on the A. and P. S. Co.'s lines." Explain this direct contradiction, and inform us in what manner an insufficiency of business on the A. and P. lines interfered with the system on the Western Union lines.

Take back that "lie" (downright falsehood). We did not assert that your system was introduced and failed.

We were too well aware of the facts to admit its introduction. It was experimented with, tested—not by the Telegraph Company but by the inventor—but never used for actual business by the W. U. Co. Three months ago you claimed it had been introduced on W. U. lines. Why is it not now in use? Where are the instruments now?

GRASS VALLEY.

The Abuses and Sufferings of the Chicago Telegraphers.

CHICAGO, ILL., Oct. 16th.

TO THE EDITOR OF THE TELEGRAPHER.

THE hours of labor, the salaries and privileges of the employes of the Western Union office here, are far less favorable than those of New York and other large eastern offices. We do not complain that our more fortunate brethren have less cause for dissatisfaction than ourselves, but desire to know why an operator in Chicago should be required to perform more work for less money than he would be if located at other offices of the same company. This does not seem to us either just or generous.

The "day men" work every other night until nine o'clock, and, if they are "stuck" (which happens very often), until ten, eleven or twelve o'clock. Night men are obliged to work one or two hours at noon every day. I have not time or opportunity now to give you the hours of the different "reliefs," but will do so at a future time.

Night work is generally considered harder, and is better paid than day work, but, with two or three exceptions, this rule does not prevail here.

The managers of the Western Union monopoly appear to think that telegraph operators are at their mercy, and obliged to accept any terms they may see fit to offer. Perhaps this is so, and perhaps not! Time will tell.

I understand that the night men put in a petition to let off two men every fourth Sunday night (the night men work seven nights in the week), which was referred to Handy—the insipid hop-o-my-thumb night manager. The burden of decision was a heavy one. After laying awake several nights, deliberating upon the subject, and obtaining the views and advice of his friends (?)—he has no judgment of his own—he finally concluded that he could manage to dispense with their services. One of the principal causes of his hesitancy was that in an emergency he might be compelled to do a little work himself, and his usual peaceful slumbers be disturbed. I cannot begin to tell how much this man is hated and despised by all, or nearly all, the men in the office.

The most of us here look forward with interest to, and are in favor of the adoption of the Postal Telegraph. We know that our condition can be made no worse, and it may be greatly improved in that event.

There is a great deal more that I could say about the "picayune" orders and rules that operators are subject to in this office; also, the new and awkward way of putting checks on the back of messages, inaugurated by J. J. S. W.; the new way of "hanging up" coats; the proximity of the lunch room to other offensive and odoriferous rooms; the new patent "break back," uncomfortable chairs; the awkward position of the keys; defective arrangements for procuring drinking water, which I must reserve for another letter. We all regret the gloomy aspect of the old Union, now on its last legs. The only thing we can do now is to hope that some of the humane officers over us (and there are such) will look to these matters themselves, and use their influence, if not their power, to abate the nuisances that now exist. Some may think that this is the wrong way to go about it. We have waited and watched for some improvement for a long time—I may say years—and it is getting worse every day. Big things were to be done when the new office was occupied, but that is the last of all fair promises. At that event day men were to work days, and night men at night; still we go on in the same old oppressed way. Smoking has been abolished, which seems an utterly useless restriction when the operators do not come in contact with the public, and it comes hard on those who have acquired the habit.

The operating room is on the top floor, "sky parlor," and the ascent to it is not very pleasant and invigorating, especially in the summer time. Telegraphing in the sky is no figurative term here, and the professor who is endeavoring to get an appropriation from Congress to aid him in his system of telegraphing by the means of the electric currents above the earth, would have a fine opportunity here to make his experiments.

An electrician has been here some time, trying to locate "crosses" with C. F. Varley's instruments; how far he has succeeded I do not know. "Charley L." says they had better stop their testing, and send out repairers, and fix up the lines so they will work.

A person would naturally think that the agents of the company would be obliging and pleasant instead of overbearing, as they now are. A rule was attempted to be made by the "Mogul" that men should pay for substitutes while sick a short time, but he was somewhat astonished,

on attempting to enforce it, when the gentlemanly operator resigned, and quit on the spot.

We hurrah for the opposition, and watch its progress with interest, and our fervent prayer is that it may be a success.

G. J.

From Washington via Pittsburg.

PITTSBURG, Oct. 18th, 1869.

TO THE EDITOR OF THE TELEGRAPHER.

THE operators of Chicago and Pittsburg, after having thoroughly ventilated the state of telegraphic affairs in those cities through the columns of THE TELEGRAPHER, have certainly not been subdued, but having, to a certain extent, brought about several reforms, these correspondents have been satisfied that their labors were not in vain. The Chicago letter in the last issue of THE TELEGRAPHER proves that there is certainly no "irrepressible," who bears no evidence of a weak backbone.

Let me answer "Spring's" inquiries, in the Yankee fashion, by asking another question. How about the Washington operators?

I had the pleasure of an interview, a few days since, with a well known telegrapher, who has spent sufficient time at our National Capital to enable him to obtain an insight into the management of telegraphic affairs in that vicinity. The revelations thus made lead me to believe that "Spring" may employ his time very profitably at home, leaving "we 'uns" to expose any acts of injustice that may crop out in the West.

We will pass over the unnecessary repetition of the causes which led to the resignation of Mr. Lombard, and state a few facts in relation to over-work. We will venture to say that in no office either of the Western Union or other telegraph companies, are operators so universally over-worked as in Washington; nor is the requirement of extra labor confined merely to the busy season, during the session of Congress. The complement of operators is always inadequate to the amount of business transacted. The peculiar nature of the work at Washington requires a larger night force, in proportion to the whole number of operators employed, than in most cities of its size, consequently extraordinary facilities are offered for tinkering up time tables. That, however, is a minor evil, compared with others which may be enumerated. If a man knows that he is on duty at a certain hour of the night he may regulate his meals and rest accordingly. There, however, an operator is compelled to hold himself in readiness to go on duty at a moment's warning, even though he may be at home and in bed. This might also be rendered at least endurable, were it not that no additional compensation is allowed for such extra service. This is the regular arrangement, as practiced month after month, for it is the openly proclaimed policy of the Superintendents to work the Washington offices with a short force, and depend upon a tyrannical system of impressment of operators, who have already finished an exhausting ten-hour shift, make doubly tiresome, on many occasions, by the horrible condition of the New York and Washington lines, especially during the prevalence of a storm. Those who perform such an amount of night work that it is a physical impossibility for them to perform full day duty are allowed a small compensation for working in the branch offices at the capital, which are not required to be opened until a comparatively late hour in the day. By this ingenious arrangement the Western Union Company is enabled to secure three days' service for two days' pay.

It must not be supposed that human beings can endure such an over draft upon their vital powers as is thus forced from them by the agents of a vast corporation. Nature's laws, thus violated, eventually exhibit their supremacy over the will of man, and the poor operator must, in the end, succumb either by resignation or death.

Preparations have been made, by the construction of new lines, for the transmission of a vast amount of business during the coming session of Congress. Eight or ten additional operators will be required by the companies, in order to profit by their increased facilities. Let me here interpose a warning to every operator who may wander thither in quest of employment. They will be required to work as they never have worked before, and, upon the adjournment of Congress, be discharged without a moment's notice. This has been the custom heretofore, and there has been no change in officials that should lead us to anticipate an improvement in the condition of the Washington operators.

Here, in the City of Smoke, we are by no means exempt from over-work, but eleven hours a day are endurable, to say the least, and other impositions are of minor importance. When the proper time arrives, however, we shall be heard from, and I trust that THE TELEGRAPHER may never be called upon to chronicle the utter subjection of the

PITTSBURG OPERATORS.

The Object of that Obnoxious Order.

WASHINGTON, D. C., Oct. 10.

TO THE EDITOR OF THE TELEGRAPHER.

Is your issue of October 2d there appears an article under the head of "That obnoxious order.—Information wanted." Since the publication of that article *The Journal of the Telegraph* and *THE TELEGRAPHER* have both appeared, but neither of them contains the information asked for, and we are still in the dark as to the object of that "order." The article created not a little sensation in the office when *THE TELEGRAPHER* containing it was received. Of course all the employees endorse the article, with one exception.

Pay day for September has passed, and no deduction from salaries has been made for lost time. We are inclined to think the order is not intended for that purpose, but, as it is now reported, that the object is to show the record of each employee to the high officials when they visit our office. Even if this be so under the rule as it now stands, but one side, "that of the company," would be shown the officials. Why not show both sides? And the only way to do this is to register departure from duty as well as arrival for duty, as mentioned in a previous communication. We consider it very unjust that the company should lay their side of the question before the high officials, and the employees not be allowed to defend themselves by laying their side before those officers. We do not say that such is the object, but much is said about it as being the object of the order. We have heard it said that the manager expressed himself as not favoring the order. Then by whose authority was this "order" enforced? If it came from some one higher in authority perhaps he or they will enlighten us. One thing is certain, a full explanation of this order is very much desired by the

MAGNETS.

TO CORRESPONDENTS.

AN OUTSIDER.—See the notice in regard to anonymous correspondence. Your name is indispensable if you wish your communication printed.

INQUIRY.—Presume you have received the document and explanatory letter sent some days since.

PERSONALS.

Mr. JOE SHERWOOD, operator at Cincinnati depot of I. C. and L. R. R., has resigned, and been appointed passenger conductor on the same road.

Mr. A. KANE succeeds **Mr. SHERWOOD** as operator at I. C. and L. R. R. depot, Cincinnati.

Mr. R. B. HUBBELL has been appointed assistant in train despatcher's office of the Toledo, Peoria and Warsaw Railway Co., at Peoria, Ill.

Mr. HUGH PATTERSON has been appointed night despatcher in the same office, in place of **E. S. NEEDLES**, resigned, to accept a similar position on the C. and A. R. R., at Bloomington, Ill.

Mr. C. D. HYNDMAN has been appointed night operator at Gilman, on the same road, vice **R. B. HUBBELL**, resigned.

Mr. W. L. DORSEY has been appointed operator at Peoria Shops, of same road, vice **W. R. ALBRIGHT**, who takes position of freight conductor.

Mr. F. L. C. DAWES, formerly night operator at Fairbury, has been appointed operator at Bushnell, on same road.

Mr. H. C. HUNT has been appointed night operator at Fairbury, vice **F. L. C. DAWES**, transferred.

Mr. SAM. LEWIS has been appointed night operator at Chatsworth, on the same road.

Mr. J. B. LYNDALL, for the past three years an employe of the Western Union office, at Harrisburg, Pa., has been transferred to the Philadelphia main office, same company.

Mr. IRWIN S. RISLEY, who was sent to Harrisburg to fill vacancy caused by **Mr. LYNDALL**'s transfer, has been appointed manager of Allentown, Pa., office, and took charge on the 8th inst.

Mr. C. A. HAMBRIGHT, who has been at Atco, N. J., during the summer months, succeeds **Mr. RISLEY** in the Harrisburg, Pa., office.

Mr. S. S. GARWOOD, for the past two years manager of the Pacific and Atlantic office, at Harrisburg, Pa., is now manager of the Pittsburgh office.

Mr. JOHN A. WESTBROOK, who has been acting as operator with **Mr. GARWOOD**, succeeds him as manager of the Harrisburg, Pa., office.

Mr. MUSE, of Greensburg, Pa., has been appointed operator in the P. & A. Harrisburg office.

Mr. FRANK MERRIHEW has resigned his position with the Western Union Company at the Commercial Exchange.

Mr. J. WINTRUP has been transferred from the main office to the vacant position.

Mr. FRANK JOHNSON and **Miss L. NELSON** have resigned from the Western Union Philadelphia office, and accepted positions with the Franklin Company.

Mr. CHARLES ALLEN has resigned his situation in the St. Louis, Mo., Western Union office, and accepted a position in the Northwestern Telegraph office, at Minneapolis, Minn.

Mr. CONNER relieves **Mr. JOHN STALAU**, at the Metropolitan Hotel Western Union office, Washington, D. C. **Mr. STALAU** goes to the office of the same company in the City Post-office, Washington, D. C.

Mr. HARRY HENRY has been transferred from the "P. O." to the main office of the Western Union Company, at Washington, D. C., as relief operator.

Mr. HARRY LOMBARD, of Willard's Hotel Western Union office, at Washington, D. C., has returned to duty.

Mr. C. W. NORTHROP has resigned the Rhinebeck, N. Y., office of the Atlantic and Pacific Co. and engaged in the drug business in that place.

M. AMYOT, Inspector-in-Chief of the French Telegraphs, was recently seized with an apoplectic fit on the Boulevard des Italiens, and was carried to a druggist's shop, where he died soon afterward.

Mr. CHARLES T. HABLESTON, who has been manager of **HARRISON BROS. & Co.**'s private wires for the last three years, has resigned, and joined the fast nine of the Bankers and Brokers, at No. 37 South Third street, Philadelphia.

Mr. FRED C. CATLIER, of No. 145 Broadway, Western Union office, has just returned from his wedding tour.

Mr. A. M. SHEFFER, operator at 145 Broadway, has been retired.

Mr. BOGART has been appointed operator at the 145 Broadway office.

Mr. JOHN F. STEVENSON has been retired from the Western Union Chicago (Ill.) office.

Mr. W. W. THWEAT, of the Western Union main office at Washington, D. C., has gone to Petersburg, Va., on a short vacation.

Miss GIDDINS, of New York, accepted a situation at Post-office, Western Union office, Washington, D. C., but left after one day's trial, without announcing her intention to the manager.

THE TELEGRAPH.

Monthly Official Statement of Business, Western Union Telegraph Company.

	Aug. 1869.	Aug. 1868.
Total Receipts.....	\$612,517 47	\$602,304 73
Total Expenses.....	407,990 89	376,452 03
Net Profits.....	\$204,526 58	\$225,852 70

The French Atlantic Cable Company.

(By Cable.)

PARIS, Oct. 19.—A committee of the shareholders of the French Cable Company have forbidden the projected distribution of five thousand shares to the founders of the enterprise. They have asked to examine the expenses and affairs generally of the company.

The following is made public by the officers of the French Cable Company: "Brest, Oct. 19.—There is no ground whatever for saying that there is a fault in the French Cable. (Signed), C. F. VARLEY."

The Grisselham and Nystad Telegraph Cable.

ON the 1st instant the Submarine Telegraph Cable lately manufactured by **Mr. W. T. Henley**, of North Woolwich, for connecting Grisselham, Sweden, and Nystad, Russia, was successfully laid by him, thereby completing the system of the Great Northern Telegraph Company of Copenhagen. The length of the cable is about 100 nautical miles.—*Engineering*.

THE Great Oceanic Telegraph Company has issued its prospectus, and announces that £450,000 will be necessary for the construction of the line, and that press despatches will be sent at one shilling per word. The line will go from Ireland's southwest coast directly to Sable Island, Nova Scotia.

AN Englishman suggests the punishment of wife-beaters by means of a galvanic battery—a shocking punishment for a shocking crime.

A Heavy Day's Work.

DURING Friday, September 24, 1869, the day of the great excitement in gold, the number of messages sent and received at the broker and central offices of the Western Union Telegraph Company was as follows:

Gold Board office.....	1,754
Stock Board office.....	426
Corn Exchange office.....	300
Pearl street office.....	502
.....	255
Broad street offices.....	1,160
Pine street offices.....	264
General office, 115 Broadway.....	11,001
City Department.....	3,149

Total..... 18,811

These messages were left at the various offices at the rate of about fifty messages per minute.—*Journal of the Telegraph*.

Appointments.

Mr. WM. SMITH, for some time since night despatcher on the D. & M. Railroad, has received the appointment of day train despatcher, in place of **L. T. Chubbuck**, resigned. **Mr. Robert Cousin**, formerly relieving agent on the road, takes the place of **Mr. Smith**. **Mr. J. L. Burhans**, agent at Royal Oak, takes the mail route agency between Detroit and Grand Haven, and **M. L. Quackenbush**, of the Jackson and Lansing road, take his place.—*Detroit Daily Union*.

Telegraph Engineer Appointment.

THE post of engineer, in the new department of Post-office telegraphs, in Great Britain, will be conferred upon **R. S. Cully**, present engineer of the Electric and International Telegraph Company.

Information Wanted.

THE present address of **Mr. Frank Davis**, formerly train despatcher on the Oil Creek Railroad. Also of a **Mr. Clough**, or **Clowe**, who, when last heard from, was on the Union Pacific Railroad.

A Telegrapher Wants a Situation.

WE find the following advertisement in the *Philadelphia Ledger*:

"A gentleman wishes a situation as Telegraph Operator, or doing some Writing, or Bar Tender, or some light situation, as he has lost his leg in the late war. Address, 1259 Serrell Street, Port Richmond, Phila."

It is to be regretted that a telegraph operator should be reduced to the necessity of accepting a position as bar tender.

THERE is every probability that the French Post-office and Telegraph systems will be united, under the direction of the new Minister of the Interior, and that both, despite assertions to the contrary, will be conducted more rigorously in the government interest than heretofore.

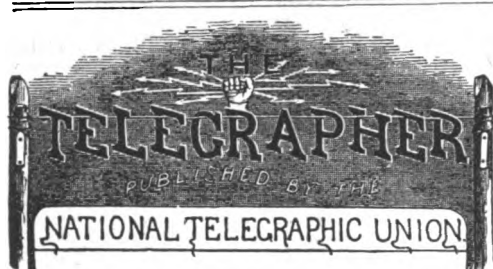
A New Theory of the Aurora Borealis.

DR. A. W. HALL read a paper before the Polytechnic branch of the American Institute, on Thursday evening, Oct. 14th, on the cause of auroral lights. His theory is that the boreal display is produced by the rays of the sun, which are reflected from clouds surrounding the pole, to the ice and snow of the Arctic regions, and thence again reflected to the clouds, and so back and forth, until it comes within our range of vision. The glancing and flashing of the columns of light, he holds, are caused by the motion of the clouds.

The strongly developed electric influence which invariably accompanies auroral manifestations scarcely coincides with the correctness of this theory.

Resignation and Appointment.

Mr. MARTIN RYAN has resigned his situation as Superintendent of the Dominion Company's lines (of Canada) and has gone West. **Mr. HUGH NELSON**, manager of the Toronto office, has been appointed Superintendent, *pro tem*. We believe **Mr. NELSON** to be well qualified to perform the duties of Superintendent to the satisfaction of the Company and the public. Under his management the lines will be economically and energetically administered.



SATURDAY, OCTOBER 23, 1869.

J. N. ASHLEY,.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.

Vice-President..W. O. LEWIS....New York.

Treasurer.....A. L. WHIPPLE....Box 39 P. O., Albany, N. Y.

Recording Sec...W. W. BURHANS...Box 6010, P. O., New York.

Corres. Sec....F. L. POPE.....Box 6010 P. O., N. Y.

TELEGRAPHIC FAILURES.

THE history of telegraphic enterprises in this country is remarkable for the pecuniary failures which have attended them. Even the lines which are now established and successful have proved to most of the original investors, the parties furnishing the money which paid for their construction, losing investments, sometimes to the whole amount of the capital invested. The numerous companies and lines comprised in the Western Union combination are no exception to this rule. It is true that the business of that company is now remunerative and profitable, but, with a few exceptions, the parties who are now profiting by the success of that company are not those whose money originally created and established the lines and business. The Western Union Company is for the most part made up of the remains of bankrupt and unfortunate companies, which have been consolidated and bought up upon terms anything but advantageous to the original stockholders. In carrying out these plans of consolidation a few large fortunes have been realized, but each one of these represents the wreck of hundreds of other ventures which have been swallowed up to create the exceptional successes.

In the earlier years of the telegraph, when everything in regard to a new and undeveloped business had to be learned, such results were to be expected. Faulty construction, defective and inefficient systems of doing business, and consequent wastefulness and loss, were perhaps unavoidable. While this fact must be admitted, it will no account for the subsequent failures and losses. During the last ten years telegraphing has become a certain, demonstrable business, which, under proper management, should prove remunerative. That it has not so proved the experience of thousands of investors has sufficiently demonstrated. Why it has thus resulted we propose briefly to show.

Ignoring the experience of the earlier years of the telegraph in this country, why have telegraph investments, during the last ten years, so generally proved unremunerative? The original difficulty is found in the organization of the companies. Instead of being organized to build a desired line or system of lines upon the best, most advantageous, and most economical plan, they are created to confirm and carry out projects originating with some telegraph speculators or contractors, whose only interest and profit is in the construction of the lines. The Boards of Directors, or rather the names of those who compose them, are bought and paid for by these speculators or contractors. Their only business is to complete the previously prepared contract for construction. The contractors not only undertake to build the lines, but also to get up the subscriptions to the

stock. They go to the public with the names of the Directors as endorsers, and place the stock at any figure which can be obtained. As much stock is placed as possible, and the work of construction commenced. The character of the work done under such an arrangement may be easily understood. When no more money can be extorted from the public the work stops, and the subscribers find themselves with a lot of badly constructed—oftentimes badly located and inefficient—lines on their hands. There is no money to complete them, and, after struggling along for a time, hampered with increasing debts, they are ready to fall into the great combination, and are held up as another evidence that telegraphic competition cannot be made to pay. Any person familiar with telegraph history will recognize the truthfulness of this sketch.

Under such a system of management failure is unavoidable, and the only cause of surprise is that these companies succeed in keeping afloat as long as they do.

We are satisfied that properly and honestly constructed and managed lines can be made not only self-supporting but remunerative, even in competition with the Western Union Company; but to do this the contract system must be ignored—practical, honest and experienced telegraph engineers must be employed to supervise and manage the work in the interests of the stockholders and the public. When the lines are built the best systems of telegraph and of business must be adopted. Under such conditions telegraph lines will pay; without them telegraphic investments are a delusion and a snare.

Telegraph Institutes Again.

WE have received a note from Mr. HOLLENBECK, of Indianapolis, Indiana, whose Telegraph College circular was noticed in a recent issue of THE TELEGRAPHER. Mr. HOLLENBECK complains that our notice was "uncomplimentary," and assures us that he never makes false statements, and that he can substantiate every paragraph in his circular by evidence that would satisfy a jury.

We have thus complied with Mr. HOLLENBECK's request that we would give his denial as conspicuous an insertion as the attack.

We have no disposition to do Mr. HOLLENBECK or any other person injustice, but as we regard the pretence of teaching practical telegraphing, or properly qualifying operators for responsible telegraphic positions in institutes or colleges, as in itself a fraud, we cannot see that his assertion of truthfulness helps his case much.

We have already instanced the assertion that some of his graduates are *saving* one hundred dollars per month, of course leaving it as a proper inference that this saving is made from salaries for telegraphic service. We should like to see the satisfactory evidence to substantiate this statement.

Also, the evidence to substantiate the statement that *two thousand* additional operators will be, or has been needed to supply the demand for 1869.

Also, to be informed of the extent of new lines constructed, or to be constructed, by the Franklin, the Northern, the Insulated, Bankers and Brokers', and the Mississippi Valley companies.

What evidence can Mr. HOLLENBECK furnish to substantiate such statements as these:

"The number of operators will have to be increased by *thousands* to supply the demand. It is a gentlemanly and *lucrative* employment, and an excellent drill and stepping-stone to something better."

We can only renew our recommendation to possible telegraphic students to keep out of such concerns and save their money. It is a waste of both time and funds to invest them in Telegraph College instructions; and we hope every telegrapher into whose hands this paper may come, will ventilate the subject, and counsel all desirous of entering the telegraphic ranks to become operators in the regular way, and avoid all such institutions as the one engineered by Mr. HOLLENBECK.

The Postal Telegraph.

THE Postal Telegraph schemes seem to be losing what little strength and vitality they once possessed. It has been a favorite plan of the advocates of the absurdity of a government control and proprietorship of the telegraph in this country, to bring the subject up at all sorts of Conventions, and seek an endorsement of their plans, for effect upon Congress. At first, while the real effect of such a radical change in the telegraph system was unappreciated, they were quite successful in obtaining such endorsements, but as discussion has developed the true bearings of such a transfer of management and proprietorship, the good sense of the business public has led to the almost universal repudiation, by the business men of the country, of the postal telegraphers and their projects.

Last week a large and influential Southern Commercial Convention was held at Louisville, Ky. A year ago such an opportunity to make capital for the postal telegraph projects would not have been allowed to pass unimproved.

The report of the last day's proceedings of this Convention states that no allusion to the postal telegraph appears in the proceedings, but the question was brought before the Committee on Miscellaneous Business. *The committee unanimously instructed their chairman to report against the scheme, or against any proposition that might be presented recommending the government to operate a telegraph.* As the rule of the Convention required all resolutions to be referred to an appropriate committee, this was the only committee to which such a proposition could have reference.

Tapping Telegraph Lines.

THE *Sun* of Wednesday, on the authority of Gen. T. T. ECKERT, General Superintendent of the Eastern Division of the Western Union lines, makes some very absurd statements in regard to the possibility of tapping telegraph lines without discovery. The question comes up in the attempt to explain how a certain message from the Secretary of the Treasury to the Assistant Treasurer at New York, ordering the sale of gold, became public before it was communicated in the regular way.

Gen. ECKERT informs the editor of the *Sun* that it is quite impossible to tap a telegraph wire without discovery. If Gen. ECKERT can't find in the Western Union office, at 145 Broadway, plenty of operators who could put a pocket relay on any wire running into the office without breaking circuit, or the fact being discovered, the standard of ability of Western Union operators must be very low.

Gen. ECKERT further states, or is represented to have stated, that the increase of resistance caused by putting in an extra instrument would indicate the fact that the wires were being tampered with, even if the connection were made without discovery. The incorrectness of this statement is well known to every intelligent telegrapher.

Perhaps Gen. ECKERT and the editor of the *Sun* are not even now aware that during the war the military lines were frequently tampered with in this manner, and usually without discovery. Perhaps they have never heard that the government wires were tapped at Baltimore, and the military cipher despatches taken off and used, and that the fact was undiscovered for a long time, notwithstanding its asserted impossibility.

Such statements may answer for the public who are not posted in regard to electrical science, but these attempted displays of knowledge in high places are absurd, but very amusing to electricians and telegraphers.

A Telegrapher Artist.

Mr. GUSTIN, one of the operators in the Western Union office, No. 145 Broadway, has developed a very creditable talent as an artist. We have seen some portraits painted by this gentleman which would compare favorably with the work of artists of established reputation.

New Patents,

For the week ending Oct. 19, and each bearing that date.

No. 96,044.—GALVANIC APPARATUS. Elias Smith, Normal, Ill.

I claim, 1. The coil A, constructed as described, for the purpose of conducting a current of electricity around the whole or a part of the human body, substantially as herein set forth.

2. The method herein described of combining the primary and secondary currents of a galvanic or electric battery, for inducing magnetism in the living human body, by means of the coil A, battery B, helix C, and electrodes D and E; all constructed, arranged and combined, substantially as herein set forth.

MARRIED.

HAND—HOWE.—In Cherry Valley, Illinois, Sept. 8th, 1869, by the Rev. Mr. FULTON, Mr. HENRY E. HAND, agent and operator at "Co." office, to Miss JENNIE HOWE, of the same place.

PHILLIPS—ACKERMAN.—At Little Falls, N. Y., October 6th, by the Rev. Mr. PARKER, FRED. H. PHILLIPS, Manager of the W. U. office, to Miss AMANDA ACKERMAN, all of Little Falls.

OHIO RIVER TELEGRAPH

Connects with Western Union Lines at Louisville, to all points in this or any other country.

Offices at

LOUISVILLE, Ky.,

WEST POINT,

BRANDENBURG,

CLOVERPORT,

LEWISPORT,

ROCKPORT,

NEWBURG,

BOCK HAVEN,

STEPHENSPORT,

HAWSVILLE,

GRAND VIEW,

OWENSBORO,

and EVANSVILLE, Indiana.

N. M. BOOTH,

Superintendent.

POPE, EDISON & CO.,
ELECTRICAL ENGINEERS,

AND

GENERAL TELEGRAPHIC AGENCY,

OFFICE:

EXCHANGE BUILDINGS,

Nos. 78 and 80 BROADWAY, Room 48.

A necessity has long been felt, by Managers and Projectors of Telegraph Lines, Inventors of Telegraph Machinery and Appliances, etc., for the establishment of a Bureau of Electrical and Telegraphic Engineering in this city. It is to supply this necessity that we offer facilities to those desiring such information and service.

A LEADING FEATURE

will be the application of Electricity to the Arts and Sciences.

INSTRUMENTS

for Special Telegraphic Service will be designed, and their operation guaranteed.

CAREFUL AND RELIABLE TESTS

of Instruments, Wires, Cables, Batteries, Magnets, etc., will be made, and detailed written reports furnished thereon.

CONTRACTS

for the Construction, Re-construction and Maintenance of either Private or Commercial Telegraph Lines will be entered into upon just and reasonable terms.

VARIOUS APPLICATIONS OF ELECTRICITY.

Special attention will be paid to the application of Electricity and Magnetism for Fire-Alarms, Thermo-Alarms, Burglar-Alarms, etc., etc.

TELEGRAPHIC PATENTS.

We possess unequalled facilities for preparing Claims, Drawings, and specifications for Patents, and for obtaining prompt and favorable consideration of applications for Patents in the United States and Foreign Countries.

EXPERIMENTAL APPARATUS.

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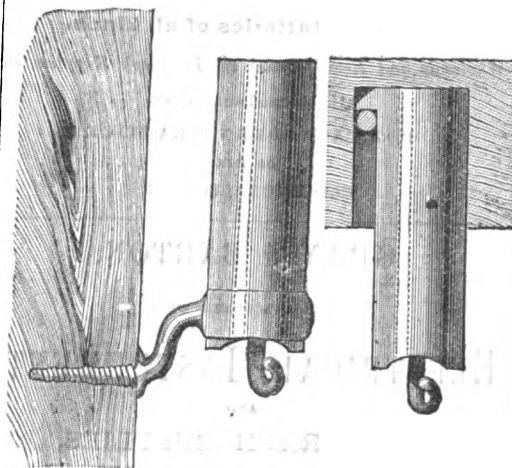
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at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same.

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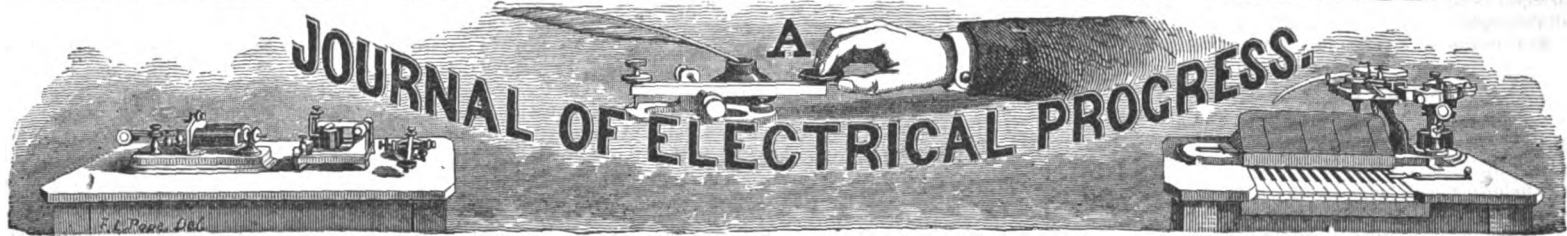
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THE TELEGRAPHER.



Vol. VI.—No. 10.

New York, Saturday, October 30, 1869.

Whole No. 172.

[Written for THE TELEGRAPHER.]

THE AMERICAN INSTITUTE FAIR. ELECTRICITY AND ITS APPLICATIONS. III.

MANY attempts have been made, during the past twenty or thirty years, to apply electro-magnetism as a motive power for driving machinery. The immense force manifested in a properly constructed electro-magnet, even when excited by a comparatively feeble current, and the readiness with which this power can be annulled or reversed, has led numberless sanguine inventors to cherish a hope that they could evolve from the voltaic battery a motive power as economical and yet more energetic and manageable than steam. But the immense amount of inventive talent expended in attempts to realize this expectation have, thus far, only served to show that electro-magnetic engines can never be depended upon as a very efficient or economical source of power. Electricity is now known to have a definite *mechanical equivalent*, and, as long as the zinc and acids required to produce electricity are so much more costly than coal, it is not probable that electricity will supersede the more economical motors now in use. But there are, nevertheless, certain circumstances under which a motor of this kind may be usefully and practically applied, especially in cases where economy is of less consequence than convenience and facility of application. An instance of this kind may be seen in the present exhibition, where an Elliptic Sewing Machine is shown, driven at a high rate of speed by

GAUME'S ELECTRIC ENGINE.

Although this engine naturally attracts a great deal of attention from the visitors at the fair, it presents very few points of absolute novelty, and, in economical application of power, is scarcely equal to many of the contrivances invented by the late Prof. Chas. C. Page, some twenty odd years ago. The sewing machine motor consists of six electro-magnets, radiating from a common centre, like the spokes of a wheel, the poles projecting outward. The armatures, which are eight in number, revolve in a circle passing in close proximity to the poles of the magnets. The shaft of the wheel carrying the armatures also carries the circuit breaker, which consists of a small wheel, instead of the spring usually employed. As each armature comes opposite a magnet the circuit of the latter is broken. On account of the number of armatures being greater than the number of magnets, two or three of them are always subject to the attractive power of the latter at any given time. With this engine six cups of Bunsen's nitric acid battery were required to operate the sewing machine. A larger engine near by, with eight magnets and ten armatures, was employed in driving a model of Woodward's pump. This engine required twenty-three cups of Bunsen's battery to drive it, which would seem to be a very great expenditure of electric force in proportion to the results attained. The inventor or exhibitor is evidently not much of an electrician, or he would not employ an "intensity" battery of twenty-three cups to work electro-magnets whose helices were composed of two or three layers of No. 12 or No. 14 copper wire. Doubtless the greater number of spectators who crowd around the electric engine consider that, as a sewing machine motor, the question is solved, but it may safely be predicted that a very short experience of a six cup nitric acid battery will cause the presiding genius of the household to go back to the old way. It is not, by any means, impossible, however, that sufficient power for this purpose may yet be developed from a Daniell's battery of three or four cells, and when this is successfully done the inventor may safely consider himself on the highway to fortune.

Another application of electricity, which has not been hitherto publicly exhibited, is the

ELECTRIC ORGAN

exhibited by Hall, Labagh & Co., 5 Bedford street, New

York city. This instrument is intended to present a fair specimen of their workmanship as organ builders, and, at the same time, to exhibit the new electric organ action patented by Mr. Hillborne L. Roosevelt. This was practically applied, for the first time, by the inventor, in their factory, in connection with a smaller instrument, which was satisfactorily tested by a number of our leading organists. The object of this new electric action, as well as the means employed, are very simple. In the first place, it is necessary to mention, for the benefit of those who are not familiar with the usual mode of building a large organ, that it is a great advantage for the organist to be placed at a considerable distance from the sounding body of the instrument. To accomplish this the key-board is often placed on the floor of the church, while the organ itself is aloft in the gallery; and this arrangement enables the organist to form a better judgment of the effect of his performance and also accommodate the choir. But, of course, it is indispensable to connect the key-board with the main body of the organ. This formerly required a complicated system of wooden rods, wires and squares, running under the floor from the key-board up to the gallery. The machinery was subject to friction and derangement, and was affected by changes of weather, and the action was often so stiff and capricious that the organist found his duty extremely laborious, while the organ builder was often called in to make extensive repairs.

Under these circumstances a difficult problem was to be solved. Any improvement on the old action must be simple in itself, and easily kept in order, and must, of course, be free from the effects of friction or atmospheric changes, so as to insure a light touch on the keys and an instantaneous response from the organ pipes at any practical distance from the key-board. The new electric organ action will fully comply with all those requirements. It is found that the touch is always as light as that of the piano, and the action is literally as quick as lightning, while any one of ordinary intelligence, having charge of the building in which the organ may stand, can keep it in running order, so far as the battery is concerned.

The connection between the key-board and the body of the organ is a bundle of flexible, insulated copper wires, which may be carried in any direction without injury.

The source of the electric current is an ordinary Smee battery, placed in any convenient position, composed of a series of jars containing a mixture of sulphuric acid and water, and in each jar is suspended a plate of carbon, in company with two plates of zinc, connected in the usual way by copper wires. From one end of this series of jars a copper wire proceeds to the key-board, and in the case of a single key, for example, when pressed down by the finger of the player, the wire is so connected that it forms an unbroken circuit, and proceeds from the key-board onward to the body of the organ, where it is coiled around an electro-magnet, thence returns from the organ to the other end of the battery. When the key of the organ is not touched the wire is not connected, and no current passes; but, on pressing down the key a metallic contact is formed, and the electro-magnet, becoming at once excited, pulls down the pallet or opens the valve in the wind chest, admitting air to the organ pipes, and with lightning speed causing them to speak.

The couplers are applied and the stops drawn upon the same principle, but it is difficult to give any idea of the mechanism in its details without the aid of engravings.

It is said that the inventor knew nothing of any foreign application of this idea to the organ until after he had brought his system into working shape. We understand that a more expensive and less simple arrangement has been successfully applied in England and France.

A notice of the electric clocks on exhibition must be deferred till another week.

F. L. F.

LITERATURE.

"*The History and Progress of the Electric Telegraph*," with Descriptions of some of the Apparatus. By Robert Sabine. 1 vol. 12mo, 280 pp. New York: D. Van Nostrand.

We are glad to see an American edition of Mr. Sabine's interesting and valuable work on the Electric Telegraph. The book before us has been condensed from the larger work by the same author, published in England two or three years since, and the more scientific and theoretical portion omitted, with a view, we presume, of publishing it hereafter in a separate volume, as there are many persons who would be interested in the history of the subject, and the descriptions of apparatus, who would not care for the theoretical part, and *vice versa*. The portion of the work devoted to the description of the different systems and apparatus now in use is very full and satisfactory. The subject of insulation is fully treated upon, and brought down to the latest dates.

Taken altogether this work supplies a vacancy which has not been filled by any existing work on the subject. The share which our own country has had in the invention and introduction of the most simple and practical form of telegraph in existence is freely accorded. The great fund of valuable information contained in the work, and the profuse manner in which it is illustrated with engravings of the finest character, as well as the low price at which it is sold, will insure it a large sale.

The New Belgio-American Cable.

THE Paris correspondent of the *New York Times* writes that the arrangements between the Belgian Government and an American company, for laying a cable from Ostend to some point between Maine and Georgia, are in progress, and are now nearly completed. The line is a very important one in an international point of view, as it will be exempt from the risks of interruption to which the English and French lines will be exposed in time of war. The conditions of the concessions, as proposed by the company and accepted by the Belgian Government, are as follows: The line is not to touch on any foreign territory between the two coasts, and is to be in working order by the 1st of September, 1871. The privilege is exclusive, and is to cover the period of twenty years. Messages are to be charged for at the rate of ten cents a word, and no message amounting to less than a dollar will be transmitted. The Belgian Government is to exercise such a supervision and control over the line as will prevent messages being divulged, and the same powers are offered to the United States at the other side. This makes it a Government cable—a postal extension, in fact—without cost to either Government. Both Governments are to have the free use of the line for thirty minutes each every twenty-four hours. During the remaining time Government despatches are to be treated the same as general messages, with a right of precedence, however. Neither Government is to use the cable longer than an hour at any one time, in the event of the other desiring to send a despatch. The object of this provision is to prevent either from monopolizing the line during a crisis, at which it might be an object for one Government to prevent another sending messages. Each of the Governments is to have its own confidential operator to forward its messages, and the other operators are to retire and to leave him in possession of the line when he is at work. Both these operators are to be paid by the company.

You will see by these provisions that every precaution has been taken to guard against interference with the honest and impartial working of the line. These safeguards were proposed by the company itself, in view of the special interests which they desire to create. The arrangements are very far advanced, and it is expected that the concession will be formally completed in the course of a week or two.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Military Telegraph Ciphers.

WASHINGTON, D. C., Oct. 25th.

TO THE EDITOR OF THE TELEGRAPHER.

IN THE TELEGRAPHER, of issue October 23d, I observe the following statement, occurring in an article on the "Tapping of Telegraph Wires:"

"Perhaps they have never heard that the government wires were tapped at Baltimore, and the military cipher despatches taken off and used, and that the fact was undiscovered for a long time, notwithstanding its asserted impossibility."

I do not question the truth of this statement, so far as the Editor of THE TELEGRAPHER is concerned, but I feel confident he has been misinformed. I was for a long time connected with the U. S. Military Telegraph at the War Department, and had some considerable knowledge of the working of its cipher system, and I have yet to learn of a "military cipher despatch" having been "taken off" the wires surreptitiously "and used." If, however, such a case did in fact arise, I would be glad to be informed of the circumstance, for it would materially weaken the confidence I have ever entertained of the inviolability of the "U. S. Military Telegraph Cipher System" in use during the war. CHAS. A. TINKER.

Prof. Morse's Report on the Paris Exposition.—Telegraph Matters at the Capitol.

WASHINGTON, D. C., Oct. 17.

TO THE EDITOR OF THE TELEGRAPHER.

A SPECIAL meeting of the Washington District N. T. U. was called for to-day, but their being no quorum present the meeting adjourned.

The report upon the Telegraph Department of the Universal Industrial Exposition at Paris is being rapidly pushed at the Government Printing Office, and it will be out in a short time. The work will cover from three to four hundred pages, and will be of a very interesting nature. It embraces full and complete reports upon instruments, wires, the printing telegraphs, batteries, insulators and insulation, cables, automatic, recording, transmitting and controlling systems; information concerning telegraphs in various countries; invention of the telegraph; in fact, it embraces reports upon almost every conceivable subject of telegraphic interest. It also contains letters from the leading manufacturers of telegraph supplies in the world, numerous cuts and engravings of instruments, etc. The report has been prepared by Prof. S. F. B. Morse, and is very full and complete.

One of our morning papers, a few days since, in referring to an error, says: "A despatch from New York, received on Thursday last, and printed in our issue of yesterday," said "The Congressional Committee on the causes of decay in American commerce held its first meeting Thursday, in a room of the Custom House. The despatch should have read 'to-day' instead of 'Thursday.'" We make this correction because we do not desire to mislead our readers. At present we have no means of knowing when such stupid telegraphic blunders will cease."

This paper seems to take a particular delight in trying to place all telegraphic errors upon the operators. It is very probable that this error was made by the reporter and not the telegrapher.

In the Board of Common Council, on the fourth ult., the bill regulating the compensation of the superintendent and operators of the fire alarm telegraph was received from the Board of Aldermen, read twice, and referred to the Committee on Ways and Means. Also, in the Board of Aldermen, the bill which provides for the establishment of a fire alarm and police telegraph to the Washington Asylum was received from the Board of Common Council, read twice, and referred to the Committee on Finance.

The B. & B. Co., have opened a branch office at 444 Seventh street, in the segar store of Mr. A. J. Lombard, who is in charge of both the telegraph office and segar store. SPRING.

The N. T. U. Telegraph Matters in Baltimore.

BALTIMORE, Md., Oct. 12.

TO THE EDITOR OF THE TELEGRAPHER.

LITTLE of telegraphic interest has transpired since my last letter.

The assembling of the National Telegraphic Union was watched with interest by the telegraphers here. Al-

though this District has ceased its operations, I am satisfied that by energy and labor new life could be infused in it as well as in many other Districts situated as this is.

The usefulness of the Union, and the benefits which have resulted from its existence and labors, so ably set forth by Mr. Young, are convincing arguments that the N. T. U. should be re-established and re-invigorated in some way which shall insure its permanence.

THE TELEGRAPHER continues to be appreciated, and its columns, so well and ably filled with matter of interest and importance to the telegraphic fraternity, are scanned, and its weekly advent anticipated with interest by its numerous subscribers here as well as elsewhere.

The Franklin Company have opened a branch office on Baltimore street, near Hanover, with Mr. Thomas Clinton as operator in charge.

The business of the Bankers and Brokers' Company, in this city, has wonderfully increased, and this favorite company seems to be obtaining a large share of public patronage. * * * *

Quaker City News.

PHILADELPHIA, Oct. 18.

TO THE EDITOR OF THE TELEGRAPHER.

A FEW words from this unknown place—unknown through the columns of THE TELEGRAPHER—may not prove uninteresting. It could almost be said that the memory of that most ubiquitous individual, "the oldest inhabitant," would be severely tasked to bring to recollection anything that has appeared concerning Philadelphia and her doings, as regards telegraphing. It should not be thus, considering the well known ability that must be lying dormant. I suppose, however, that the apathy shown in regard to the Union itself has extended to one of its chief supports.

Philadelphia has within her limits some of the best telegraphers in the country, and is second, I believe, in point of business, and that there is no Union District here does not speak well for their energy. Once upon a time there was a District here, but it was dissolved, and the knowing ones do say that the loyal ones, ten or twelve in number, feathered their nests pretty well.

The Western Union office here is managed by Mr. James Merrihew, which of itself is proof positive that it is well managed.

The Bankers and Brokers' line is under the superintendency of Mr. J. W. Dyer. To what extent he has made his work a success is seen in the increased amount of business transacted over that line. Connected with their office is also the Gold Indicators under the control of Mr. James Partrick. They have given very general satisfaction since being in use.

The Franklin and Pacific and Atlantic Company's office is under the management of Mr. Sewell Smith. These lines are also increasing in favor with the business community. The latter Company will shortly have wires of its own between Philadelphia and New York. It is their intention, I understand, to then cut loose from the Franklin altogether.

The Western Union has all it can do to compete successfully with these aspirants for the favors of the public in this section of the country. But what do a few hundred miles of wire amount to as a real live opposition? The great desideratum, one which THE TELEGRAPHER has so repeatedly urged, but which seems so distant, is the consolidation of all these rival lines into one large concern—one that could extend the competition westward, by building new lines, &c. Were such a consolidation consummated—a thing devoutly to be wished for—we would not have to be humiliated by seeing the crushing out of newspapers, &c., chronicled, *vide* the San Francisco Herald. If any ideas of the practicability of Postal Telegraph schemes ever could exist outside of the very fertile imaginations of the projectors, just such actions as these would be sure to make proselytes.

SUB ROSA.

A Telegrapher Abroad.—Vacation Ended.

LONDON, ENG., 27th August, 1869.

TO THE EDITOR OF THE TELEGRAPHER.

SINCE early morning London has been excited. The trains for Hammersmith, Putney, Mortlake, and other places on the river, have been crowded with people going to the great race. As it will be an old story to your readers long ere this reaches you, I will only state that I saw both crews pass me very close, the Harvards leading in grand style, but never able to get away from the Oxford.

Since my arrival I have visited nearly every place of interest in the city, and a good many out of it. I devoted two days to the Crystal Palace. It is a wonderful place, and well worth a journey across the Atlantic to see it. The British and Kensington museums also interested me very much.

As to matters telegraphic, I have seen very little. In Scotland I observed a few miles of insulated air line. I cannot state how it worked. Advertisements were appearing in the papers, signed by the Postmaster-General, inviting tenders for poles, and also for building the new extensions.

I sail from Glasgow for New York on the 10th of next month. LOCAL.

A Good Appointment.

BOONE, IOWA, Oct. 21.

TO THE EDITOR OF THE TELEGRAPHER.

MR. JAMES K. GULIHUR has been appointed night train despatcher of the Iowa divisions of the Chicago and Northwestern Railway, with headquarters at Boone, Iowa.

Mr. Gulihur is eminently qualified to fill this position, which is a very responsible one—two distinct divisions, embracing 352 miles of road. If a cool head, clear judgment, faithful attention to business, with hosts of friends, will carry one through, Mr. Gulihur is O. K. IOWA.

PERSONALS.

MR. CHARLEY PATCH takes a short vacation from the Western Union Chicago office.

MR. JOHN STEPHENSON has accepted a situation in the Cincinnati Western Union office, and works No. 8 Chicago wire nights.

MR. M. F. ADAMS, of San Francisco, Cal., Western Union office, has come East on leave of absence for a few weeks.

MR. KINNAMAN, formerly of Keokuk, and lately from the Pacific lines, has accepted a position as night operator in the Chicago Western Union office.

MR. WM. STONEBACK, assistant night manager of the Western Union Chicago office, has gone East.

MR. L. H. KORTY has been appointed assistant night manager of the Western Union Chicago office, *vice* STONEBACK.

MR. A. A. HONEY has withdrawn his resignation, and continues in Chicago Western Union office.

MR. J. STEWART has resigned his position as operator in the Montreal Telegraph Company's office at Quebec, and accepted the appointment of chief operator in the People's Telegraph Company's office at Montreal.

MR. J. A. MACDONALD has resigned his position as night operator in the Montreal Telegraph Company's office at Ottawa, and accepted a situation as day operator in the Montreal office of the People's Telegraph Company.

MR. W. H. KELSEY, formerly of the Russian extension line, and more recently of the Cheyenne office, has taken a position in the Western Union Chicago office.

MR. M. O. PARK has taken charge of the Nashville and Chattanooga R. R. office at Wartrace, Tenn., *vice* E. O. ESHELBY, resigned.

MR. E. O. ESHELBY has resigned his position as operator on the Nashville and Chattanooga R. R. at Wartrace, Tenn., to take charge of the Western Union office at Shelbyville, Tenn.

MR. C. A. SKINNER, formerly night manager at Boone, Iowa, has been appointed agent and operator at Woodbine, Iowa, of the Chicago and Northwestern Railway Company.

MR. A. H. ROY takes charge of Big Sandy, Tenn., office, *vice* Mr. H. C. Cox, resigned, and gone to Missouri.

MR. C. MCCARTHY, formerly train despatcher Memphis and O. R. R., resigns, and accepts a situation in the city office "day force."

MR. SPEAR, formerly of Nashville W. U. office, has been appointed train despatcher Memphis and O. R. R.

MR. FRED. H. LAWRENCE has resigned his position in the W. U. Albany, N. Y., office, and retired from the business. He is at present travelling in Kansas.

MR. SAM. J. WHYTE, late ticket agent for the R. and S. R. R., Albany, has accepted a position in the A. and P. Albany office.

GEO. RICHARDSON has severed his connection with the N. Y. C. & R. R. Little Falls, N. Y., office, to accept a position in the Chicago W. U. office.

J. J. FITZGERALD, formerly of the Depot night office, Albany, N. Y., fills the place vacated by Mr. RICHARDSON.

J. D. HAINES, of Coxsackie, N. Y., accepts the vacancy at "X. N." Depot, Albany office, nights, vacated by Mr. FITZGERALD.

W. T. ADAMS, formerly of Schenectady, N. Y., office, is at present filling the vacancy at "Da." Albany, nights, caused by A. E. CLARK, going to machine shops at West Albany.

GEO. R. MURDOCK goes to Schenectady to fill Mr. ADAMS' place, while Z. P. DE Forest closes the gap made by Mr. MURDOCK at West Albany cattle yard office, nights.

F. H. PHILLIPS, for many years manager and ticket agent of Little Falls, N. Y., office, has returned from the West.

Mr. THOMAS STEWART, Jr., lately of the Saratoga Springs W. U. office, has accepted a situation in the Albany, N. Y., office, same company.

Mr. WARREN, lately of Memphis, Tenn., after a few days' experience in Chicago office, has transferred his services to the New Orleans Western Union office.

Mr. C. M. GREEN has returned from a few weeks' vacation, and resumed his duties in the Chicago Western Union office.

Messrs. W. ARMSTRONG and J. C. BELL, formerly of Toronto, are now at work for the Western Union Co. in the Chicago office.

THE TELEGRAPH.

(By Atlantic Cable.)

LONDON, OCT. 23.—One length of the new submarine cable, designed to connect Havana with the island of Jamaica, has been completed.

The Telegraph in Chili.

RECENT Valparaiso advices state that the exclusive privilege demanded by Messrs. Clark & Co., for the construction of a telegraph from Santiago to Buenos Ayres, which had been submitted to a Commission appointed by the Government, reported, as bases for the acceptance of the contract, that Messrs. Clark & Co. be paid \$9,000 annually by the Chilean Government, for nine years after the completion of the line; second, that all tools, &c., not exceeding in value \$50,000, are to be free of import duty; third, that the Company transmit, free of charge, all official communications, and, at the expiration of the time named, sell at a valuation all lines which may be in existence; fourth, that the Company will be amenable to Chilean courts of justice; fifth, this last article provides for the commencement of the work within twelve months.

A New Telegraph Company in Iowa.

ARTICLES of incorporation of the Hawkeye Telegraph Company have been placed on file in the office of the Secretary of State. The line is to run along the route of the Central Railroad Company of Iowa, and thence north to St. Paul, Minn., and south to St. Louis, and elsewhere from this line to other points, as may from time to time be expedient. The capital stock is limited to \$500,000. The place of business of the Company will be in Eldora, Hardin County.

Silly Islands Telegraph Cable.

WE learn from the English papers that telegraphic communication with the Silly Islands is now complete, the work of laying a submarine cable from the west coast of England to the islands having been accomplished the latter part of September. This fact is of special interest to the mercantile community. The position of the group at the mouth of the English channel, and the accommodation afforded by their principal harbor, at St. Mary's, render them admirably adapted for all the purposes of a port of call. Vessels can lie there and wait for orders without any risk of delay—proceeding to their destination without loss of time, if it happens to be in the English channel—and effecting a considerable saving as compared with putting in at Falmouth or Plymouth, should they be sent to an Irish port, or any place on the western coast of England. Disabled vessels putting in there may communicate immediately with owners, and intelligence of vessels passing up the channel may be reported thence. It is probable that the cable will be extended to places on the coast of France, thus increasing its field of usefulness.

Opposition to Monopoly.

THE Western Union Telegraph Company's operator at Hannibal, Mo., absconded yesterday with \$300 of the Company's funds.—N. Y. Daily News.

Appointment.

MR. F. C. BELDEN has been appointed division telegraph operator and train despatcher on the New York Central Railroad, with headquarters at Syracuse, N. Y. The division telegraph operator is superintendent of telegraph on his division of the road. Mr. Belden's appointment is a good one, and his many friends, telegraphic and otherwise, will be pleased to hear of his promotion.

TELEGRAPHIC BREVITIES.

Two thousand miles of telegraph line are in operation in Mexico.

An effort will be made at the next session of Congress to pass a resolution calling the attention of the Executive to the fact that no law at present exists for the protection of the Atlantic Cables from wanton and malicious destruction or injury, and suggesting that steps be taken for a convention of nations to provide the necessary protection, or to punish persons who attempt to injure the cables on the high seas.

The West India and Panama Telegraph Company announce that they have given to the India Rubber, Gutta Percha and Telegraph Works Company the order for the manufacture of their cable, and paid the first instalment, according to the terms of the contract, and that the work is being pushed on as rapidly as possible.

An official proclamation of the Tautai, at Tungche, prohibits the erection of telegraphic poles in the Celestial Empire, and with delightful complacency informs the outer world that there is no occasion for a wire in China. Poles are inconsistent with the favor of the mysterious Fung Shui, the invisible Chinese deity which resides in the atmosphere.

On October 13 there were upwards of 1,700 miles of the Anglo-Indian cable coiled on board the Great Eastern in the iron tanks. The filling of the main tank was completed on October 12. It contains about 1,100 miles of the cable. The after tank contains over 600 miles, and the workmen are now busily engaged in completing it. The utmost exertions are being used by Captain Halpin, Mr. Beckwith, and the officers and men under their command, to get the Great Eastern completed for sea by October 23, the date fixed for her departure from Sheerness en route to Aden.

The attempts to recover the shore end of the 1866 Atlantic Cable, off Valencia, have hitherto been unsuccessful. Once it was grappled, but on being hauled up it broke, and it will now be necessary to grapple both ends before the fault can be repaired. The 1865 cable continues in good working order.

A telegraph line is to be built from Yeddo to Yokohama, in Japan.

The Western Union Company have opened an office at the corner of State and South Water streets, Chicago, Ill., under the management of Mr. J. M. Bradley, with Clarence Wilson as receiver, for the benefit of South Water street business men. The office will be connected with some of the principal lines.

The Great Western Company's lines reached Burlington, Iowa, on the 16th inst. The W. U. Company have three R. R. wires constructing, which will soon reach Burlington, and "run" the opposition.

Workmen are now boring through the corner of the Telegraph and Board of Trade buildings at Chicago, Ill., for the purpose of running a pneumatic tube from the operating room of the W. U. main office to the Board of Trade room, to receive and deliver messages with greater despatch during 'change hours, eleven o'clock A. M. to one o'clock P. M.

The Northwestern Telegraph Company have lately constructed a telegraph line from Watertown to Madison, and offices have been opened at Sun Prairie and Waterloo, Wis.

The Superior Court at Chicago, Ill., has taken under advisement the case of the Atlantic and Pacific Telegraph Company against the Mississippi Valley Telegraph Company, for nullifying the sale of the latter to the Pacific and Atlantic Company. The property was sold for \$257,000, and the transfer was effected at midnight.

Tapping Telegraph Wires.

WE publish this week a communication from Mr. CHARLES A. TINKER, during the war cipher clerk and operator at the War Department in Washington, D. C., questioning the correctness of our previous statement, that during the war the military cipher despatches were surreptitiously taken off the military wires and used. Of course this is a matter that cannot be demonstrated.

During the last years of the war we were located in Washington as a newspaper correspondent. At one time there was a good deal of excitement at the War Department over a leak through which news became known, and was used for speculative purposes in Wall street before being made public in the regular way.

It was understood among the newspaper correspondents that an investigation had disclosed the fact that the wires had been tapped at Baltimore surreptitiously, and

cipher despatches thus obtained and used. This was the particular circumstance referred to, and we have no doubt Mr. GEO. W. ADAMS, correspondent N. Y. World; Maj. BEN. PERLEY POORE, correspondent Boston Journal, and other correspondents in Washington at the time, will recollect the circumstances as stated. But whether this particular statement be correct or otherwise does not relieve Gen. Superintendent ECKERT from having made very absurd statements in regard to the possibility of tapping the wires without the interference being discovered by the operators on duty at the time. We do not suppose Mr. TINKER even will venture to attempt to support the absurdities referred to, which occasioned many hearty guffaws on the part of practical telegraphers here, in which none joined more heartily than the intelligent operators of the Western Union Telegraph Company.

Packard's Monthly.—A New Volume.

THE November number of Packard's Monthly well sustains the reputation which this popular magazine has attained. JUNIUS HENRI BROWNE, ELEANOR KIRK, ELIHU BURRITT, and other popular writers contribute to the current number.

Mr. PACKARD, in his prospectus for the Third Volume, which commences with the number for January, 1870, announces an enlargement, by the addition of sixteen pages, and that in many respects the magazine will be improved. What PACKARD has heretofore accomplished, and the more than fulfilment of previous promises, guarantees that this will be no vain boast. He labors industriously, zealously and intelligently to make the monthly a model magazine of its class, and his success thus far has been most encouraging.

The subscription price, which has heretofore been ridiculously low, will be increased necessarily to Two Dollars per year, at which price it will be one of the most reasonable in terms, as it is one of the best magazines published.

Did not Leave Without Notice.

MISS GIDDINGS, whom our Washington, D. C., correspondent stated, after one day's service at the Western Union Office, at the Post-office, left without notice, denies the correctness of the statement. She states that she went there at the request of the manager of the Washington office, to see how she liked it. She did not like it, and therefore did not return; but, being obliged to leave for New York, and unable to obtain an interview with the manager, she left word of her intention with a friend, to be delivered to him, and came away.

Wanted.

THE numbers of the Round Table from January 1st to February 20th, 1869; also from July 3d, 1869, until the consolidation with the Citizen, to complete the volume. A fair price will be paid for these numbers if sent to the Editor of THE TELEGRAPHER.

Postponed.

THE strike of the Franklin operators and the Fair of the American Institute occupy so much of our space this week that several columns of editorials, correspondence, and other interesting matter in type, is unavoidably postponed.

A New Enterprise.

THE Western Union Company has inaugurated a system of city lines in New Orleans. Six offices have been established in different parts of the city. The tariff to all points outside the city—more justly than is the custom in New York—is the same as from the Central office. On Messages for city delivery the tariff is 25 cents for 10 words, and two cents for each additional.

MARRIED.

DODGE—MOZIER.—At the residence of the bride's father, near Mount Gilead, Ohio, by the Rev. M. McMillan, Mr. GEORGE A. DODGE, of the Western Union Telegraph office at Crestline, O., to Miss MARY L., only daughter of L. D. MOZIER, Esq.



SATURDAY, OCTOBER 30, 1869.

J. N. ASHLEY.....Publisher and Editor.

THE FRANKLIN TELEGRAPH CO. IN TROUBLE. A STRIKE ALL ALONG THE LINE.

CONSIDERABLE excitement has been caused in telegraphic circles, during the past week, in consequence of a strike of the operators of the Franklin line, in this and other cities, which took place on Tuesday, the 26th inst. It is well known that much dissatisfaction has existed for a long time past among the Franklin operators, the principal cause alleged being that the employees of this Company not only received salaries from twenty to twenty-five per cent. below those paid by other companies for men of similar qualifications, and employed upon the same class of work, but were compelled to work in dark, ill-ventilated and unwholesome offices. It has also been a subject of complaint that even the meagre salaries allowed them have been paid irregularly, and usually not until some time after they were due.

From the commencement of its career as an opposition Company the operators in the employ of the Franklin Company have labored faithfully to advance its interests, by the prompt despatch of business entrusted to its care, and thereby to place the Company on a firm financial basis. In order that the young Company might have a fair start, the employees made little or no objection to the low salaries paid by the Company at that time. Matters went on in this way for some two or three years, and the business of the Company steadily increased, but the salaries of the employees remained at the old rate. Some few months ago the operators, in view of the fact that the Company were evidently doing a thriving business, held a meeting, and determined to petition the Superintendent, Mr. JAMES G. SMITH, to increase their salaries to the same level as those paid to men of similar qualifications, by the Western Union and other telegraph companies doing business in this city. The late ALBERT WYETH, whose tragic fate at the hands of the Spanish authorities in Cuba is still fresh in the minds of our readers, was selected as a committee to confer with Mr. SMITH, who, it is said, promised immediate attention to their request. Time passed on, and no apparent steps being taken to remedy the injustice complained of beyond reiterated promises, the patience of the operators became exhausted, and at a preliminary meeting, held some time last week, they determined to present their case once more, and if the repeated promises made by Mr. SMITH were not fulfilled, to take some decisive measures to hasten the desired result. Having taken this resolution, a meeting was called at the Western Hotel, on Monday evening, at which nearly all the operators off duty were present, and the following preamble and resolutions were unanimously adopted:

Whereas, we are now receiving a salary less than paid by any other company; and, *whereas*, our labor is in every case as much, and in most of cases more than that performed by the operators of other companies; and *whereas*, we feel certain that the Franklin Company, by the amount of business we know is done over its lines, is able to pay us a more liberal salary; and, *whereas*, we consider our demands just and right; therefore, be it

Resolved, That we ask of the Franklin Telegraph Company an increase of twenty-five per cent. on the present salary received by all the operators in this city.

Resolved, That if this demand is not acceded to, that

we will not continue work for them after twelve o'clock, Tuesday, October 26, 1869.

The proposed increase of 25 per cent. would make the salaries of the Franklin operators equal to, and in some cases slightly in excess of, those paid by the Western Union Company at the present time.

Mr. C. G. DE MOLL was appointed a committee to present these resolutions to the President and General Superintendent of the Company, which was done on the following morning.

A few minutes before 12 o'clock, on Tuesday, a short conference was held in the office, and it being found that the request of the operators had not been complied with, when the appointed time arrived, they all, with the exception of three or four, quit work and left the office. This action was followed by all the operators in the different branch offices—only four of the twenty-four operators employed by this Company in the city remaining at work. The Boston operators also struck shortly afterwards, and were discharged and paid off by the General Agent, Mr. C. H. BURD, who informed them that he should close the line rather than reinstate any of the disaffected operators.

A meeting of the operators was held at two o'clock P. M., in a room over the Telegraph office, at 11 Broad St., and great enthusiasm was manifested. A committee was appointed to wait on Mr. SMITH, and obtain an answer to the resolutions presented by Mr. DE MOLL. During their absence several operators present spoke at considerable length, and in a very vigorous manner, respecting the injustice practiced upon them by the Franklin Company. Several telegrams were read from various points, proffering the sympathy and substantial aid of the employees of the other Telegraph Companies in different cities.

The Committee eventually returned and reported that no compromise had been effected; Mr. SMITH having refused to accede to their demands.

On Wednesday morning two or three operators appeared at the office, who had been engaged to fill the places of the seceders, but when they learned the state of the case they declined to go to work.

Another meeting was held by the operators at 10 A. M., at which Mr. C. G. DE MOLL was elected Chairman. Mr. MILLS, Secretary, and Mr. H. W. POPE, Treasurer. Offers of sympathy and pecuniary assistance poured in from all directions—the news of the strike having spread throughout the country. It was announced that the Baltimore office had joined in the strike, and the greatest enthusiasm prevailed. Speeches were made by a number of the men, evincing their determination to hold out until a satisfactory arrangement can be effected with the Company.

During the day the operators remained determined and confident, and were engaged in perfecting their organization and arranging their programme for a protracted contest. The following letter was received from the operators in the Western Union office at 145 Broadway:

NEW YORK, Oct. 27, 1869.

C. G. DE MOLL and others, of Franklin Company's Telegraph employees:

We, the undersigned, employees of the Western Union Company, learning that you have inaugurated a strike, for the purpose of obtaining an increase of salary, take this means of assuring you of our sympathy, and readiness, if called upon, to furnish more substantial aid than this; also, believing the demands made by you are, in the main just, to express the hope that you will stand firm, and endeavor to make the first telegraphers' strike a success.

The above was signed by the entire force of Western Union employees on duty that morning in the New York office, with the exception of three individuals.

Shortly after noon Messrs. WILKIE and CAPRON, two operators who had declined to strike, sent word that they had acted under a misapprehension, and they too joined the seceders. This left but one of the original force of the Franklin Company on duty in the city. Another meeting convened at 3 P. M., when the following despatches were read by the Secretary:

PITTSBURG, Oct. 27, 1869.

Our whole sympathy is with you, and we can be counted upon as ready to furnish our share of the requisite aid.

INDIANAPOLIS, Oct. 27, 1869.

Stand firm. We watch your motions with intense interest, and you can depend on us for every man and every dollar.

BALTIMORE, Oct. 27, 1869.

The operators of Baltimore are with you heart and hand, and will do everything in their power that your noble effort may prove a success. We have so notified the Franklin men here, who have also stopped, and will support their New York brethren to the last. A meeting to be held to-night will more fully express our views, a copy of which will be forwarded to you.

WASHINGTON AND RICHMOND, Oct. 27, 1869.

Tell the operators of the Franklin Company who are on a strike that we take a deep interest in their efforts to obtain their rights. They have our warmest sympathies, and we wish them success, and will aid them with our money to the best of our ability.

A committee of three was appointed to wait on Superintendent SMITH, and request him to give his decision in person or by letter on the demands of the operators, and in a few moments that gentleman appeared. He was introduced by the committee, and received with applause. Upon the suggestion of the Chair all persons present not connected with the Franklin Company withdrew. Mr. SMITH then spoke at length, arguing that the Company were not in a condition to pay the advance requested. He characterized the action of the operators as unjust, in taking advantage of the absence of the officers of the Company from the city. He was willing to meet a committee of the operators, and draw up a schedule of salaries, which he would try and make satisfactory to the operators; but to do this he required time, and wished the men to resume work at once, in order that the business of the Company might not suffer. He would not agree to advance all salaries the same percentage. He was not personally conversant with the qualifications of all his operators, and would be obliged to consult with Mr. LEAMING (chief operator of the office) in regard to the matter. Mr. BAKER inquired if, in case the schedule was received, the operators in other cities who have supported this movement would be reinstated on the same terms. Mr. SMITH hesitated, but finally assured Mr. BAKER that they should be reinstated; but as to the conditions of the advance he was not able to speak definitely. He said that men who had scarcely been forty-eight hours in the employ of the Company had joined the strikers, and he believed this thing was brought about by outside parties. He understood there was some sort of a league or association among them, as the men at Baltimore had also been induced to leave their instruments, and confessed himself unable to tell where the end of their string was, or what their next move would be.

After some further discussion between Mr. SMITH and the operators upon minor matters the former retired, having been promised an answer to his proposition in a short time.

After Mr. SMITH's departure the meeting was addressed by several operators, who contended that Mr. SMITH had already classified his operators and made his schedule, based upon the old prices; and as all classes of operators had joined in the movement, in justice to all their salaries should be advanced an equal percentage on Mr. SMITH's original classification. A lively discussion followed, during which the following letter, published in the *Boston Evening Herald* of yesterday, by the General Agent of the Company, and which had been telegraphed to the meeting, was read:

BOSTON, October 27.

Editor of the Boston Herald.

Your edition this morning has a report of a strike of operators on the line of the Franklin Telegraph Company. I desire to state facts.

At twelve o'clock yesterday a part of our force in New York struck for more pay while the manager of the Boston office was at dinner. Between one and two o'clock P. M. four of the twelve men in Boston left work. They were all paid the balance due them, and under no cir-

circumstances will either or any of them be again employed by the Franklin Company. They did not delay our business for a moment after it was known that they had left work, but those who remained had to work a little harder. This morning we have nearly a full force in New York and Boston, and by to-night we will fill every vacant place. There was no compromise whatever offered to the men after striking, and none will be made. We will not have them if they will work for nothing. We are prepared to do all the work that is offered us.

CHARLES H. BURD, General Agent.

This pronunciamento was received by shouts of derisive laughter on all sides. One member remarked that Mr. BURD's remarks were quite true, with the exception of the facts that all the men had left except two (one of whom was a woman); that all the New York men had left—that they had not a full force—that they tried to compromise—that they cannot fill a vacancy, and that under any circumstances they must take the men back. Otherwise, the statements of Mr. BURD were characterized as unusually accurate, especially in regard to their being prepared to do all the business offered them.

After the reading of Mr. BURD's proclamation the meeting unanimously adopted the following resolution:

Resolved, That a committee of one be appointed to wait upon J. G. SMITH, and inform him that his proposition cannot be accepted, and that our ultimatum is twenty-five per cent. advance upon all salaries, as now paid, and the reinstatement of all men who are now, and may be in this movement.

The following telegram was presented at this juncture, and received with cheers:

BALTIMORE, Oct. 27, 1869.

We have regularly organized with seven men, who are all but the manager, and he is all right. It is said that BURD and several operators will be here to-morrow.

A vote of thanks was tendered to the press for their able and impartial reports of the proceedings. After repeated calls Mr. HASSON, general reporter for the Southern press, and well known to the fraternity in New York and Philadelphia, proceeded to address the meeting. His intimate connection with the telegraphers of the country for the past fourteen years qualified him to testify to the general intelligence and fidelity of the operators, whose services had never been fully appreciated by the wealthy corporations. In behalf of the reporters present he extended their sympathy and aid, and wished them success. The meeting then adjourned until Thursday morning.

On Thursday morning another meeting was held, at which additional assurances of support were received.

The following card from Mr. SMITH appeared in the *Sun* on Wednesday morning:

To the Editor of the *Sun*.

SIR—A rumor was circulated that the business of the Franklin Telegraph Company has been interrupted by reason of a strike among the operators. This is far from being the case. Although a strike has been attempted, yet there was not the slightest interruption in our business, nor will there be, as I have engaged the services of a sufficient number of operators to fill the places made vacant. The strike has been instigated, as we are informed, by the opposition companies. The first notice I received of any dissatisfaction among the operators was this morning at eleven o'clock, when I was waited upon by a committee of one, and an increase of 25 per cent. on the salary of every operator in the office was demanded before twelve o'clock. As I was the only officer of the company in the city, and as I hardly felt authorized to assume the responsibility of acquiescing in the demand of the operators, I declined to comply with their request. I promised, however, that I would do all in my power to bring about a satisfactory adjustment of the difficulty, and furthermore offered to meet a committee from them between this and the 1st prox.; but before the conversation was concluded the hour of twelve arrived, and thirteen out of the twenty-four operators left the office. The rest were so disgusted at the advantage sought to be taken of the Company that they remained.

JAMES G. SMITH,
Gen'l Sup't Franklin Tel. Co.

Notwithstanding the assertion of Mr. SMITH, the business of the Franklin line has suffered severely since the inauguration of the strike—all the branch offices, to the number of five or six, being closed, and the main office working with a very small force, among whom were

numbered Superintendent SMITH and his brother, the manager of the Broad street office, who have been doing their best to keep things going, with what success, up to the present time, remains to be seen.

Several operators have been imported from country offices along the line, but many of them have joined the strikers upon their arrival, and the few who have gone to work, being unaccustomed to the class of work they are obliged to perform, can render but partial service.

The following card, in reply to that of Mr. SMITH, given above, appeared in the morning papers of Thursday, with the exception of the *Sun*:

As the card of Mr. JAMES G. SMITH, Superintendent of the Franklin Telegraph Company, published in some of the morning papers, contains some incorrect statements in relation to the strike of the operators in that office on the 26th inst., in justice to ourselves we wish to make public a few facts in relation thereto. The statement that the strike was instigated or encouraged by rival telegraph companies is utterly without foundation. The Franklin Company, some three years since, reduced the tariffs upon their lines, and shortly afterwards also reduced the salaries of their employees to a point from twenty to twenty-five per cent. below those paid by other companies. This was acceded to at the time, in order to give the company a fair start. A few months since, the business of the company having become very large, the operators requested an advance of salaries to the standard rates paid by other companies.

This advance was promised the operators at that time; but, so far from making any efforts to do this, Mr. SMITH has, on the contrary, endeavored to induce the other companies to reduce the pay of their men to the same rate as his own. Mr. SMITH was aware of the contemplated movement as early as Saturday morning. All we ask is to be paid the same price for the same work as our confreres in the employ of other companies in the city, and in this demand we shall be sustained by the profession throughout the United States.

C. G. DE MOLL, President; JESSE R. MILLS, Secretary; H. W. POPE, Treasurer; R. C. EDWARDS, T. J. HEWLETT, CHARLES D. STANFORD, THOMAS CURRY, Committee.

At the time of writing (Thursday morning) appearances indicate that the company will be obliged to make an unconditional surrender, as the line is virtually closed for business. Although everything has been conducted in the most quiet and orderly manner, yet the feeling is so strong against any operator attempting to fill the vacancies that it is probable few can be induced to do so; and the Franklin operators are so firmly sustained by their brethren throughout the country, both morally and financially, that they will be able to hold out indefinitely.

There are no apprehensions entertained of trouble upon the lines of other companies, as none of them have thus far shown any disposition to interfere in the matter. Should this be done, in the present excited state of affairs, it is possible that the difficulty would assume a more general aspect. As it stands at present, the New York, Boston, Philadelphia and Baltimore offices of the Franklin line are all involved in the strike, and there is not the slightest sign of yielding on the part of the operators. During the prevalence of the trouble we would advise operators in other places not to seek employment in this city, as there are plenty of men here, who may return to work at any moment.

FRIDAY MORNING, Oct. 29, 1869.

The Franklin Company having accepted the terms agreed upon by a committee of the operators, involving the advanced scale of prices, and a reinstatement of all the operators engaged in the movement, business was resumed as usual this morning.

Patent Office Statistics.

The following are the principal figures of the forthcoming report of Commissioner Fisher, of the Patent Office, for the year ending September 30th, 1869: Receipts, \$686,388.62; expenses, \$172,462.60; excess of receipts, \$213,962.02; applications for patents, 19,360; caveats, 3,686; applications for extension, 153; extensions granted, 125; patents issued, 13,672; patents issued, but withheld for the payment of final fees, 899.

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Other testimonials of like character have been received, all of which are conclusive that the merits of the COMPOUND WIRE have not been over-estimated.

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Many other highly complimentary letters have been received from Mr. J. VAN HORNE, General Superintendent of the Southern Division, W. U. Co., and others, which want of space prevents publishing.

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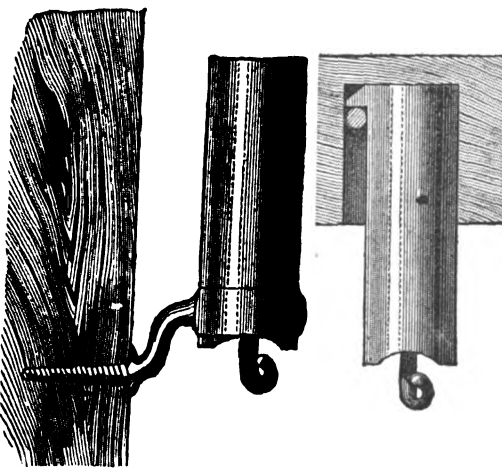
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THE TELEGRAPHER.

JOURNAL OF ELECTRICAL PROGRESS.

Vol. VI.—No. 11.

New York, Saturday, November 6, 1869.

Whole No. 173.

END OF THE FRANKLIN TELEGRAPH STRIKE. THE OPERATORS VICTORIOUS.

IN THE TELEGRAPHER of last week we gave a full and accurate account of the movement among the operators of the Franklin Telegraph Company, containing a complete history of the proceedings up to Thursday morning. Just as we went to press it was announced that the difficulty had been satisfactorily arranged, and we published a brief statement to that effect. As very general interest has been manifested throughout the country in reference to this matter, we give, as an interesting item of telegraphic history, an account of the proceedings which took place subsequent to the close of our report in the last number of this journal:

Pursuant to adjournment on Wednesday evening, the operators held a meeting on Thursday morning, at the usual place.

The meeting having been called to order, the President, Mr. C. G. DE MOLL, stated that he had received a number of communications. He then proceeded to read the following despatches:

BALTIMORE, October 11, 11.30 P. M.

Whereas, The telegraph operators of the Franklin Telegraph Company in New York and Boston have inaugurated a movement, looking not so much to the increase of salaries as for the establishment of principle, and

Whereas, We, the telegraphic fraternity of Baltimore, believing their demands just and reasonable, and

Whereas, We believe their demands would be acceded to but for the obstinacy of certain officials; therefore, be it

Resolved, That we, the representatives of all the different companies in this city, in convention assembled, do tender our aid and support to the full extent of our power, and assure them of our readiness, if called upon, to furnish more substantial aid, in any manner necessary.

Resolved, That we hear with pleasure of the unanimity with which the fraternity throughout the United States have tendered their sympathy to our New York and Boston brethren. We feel assured that if our friends stand firm success will crown their efforts to advance the standing and dignity of our profession.

Resolved, That we commend the action of the employees of the Franklin Company, in sustaining the action of their colleagues, with disinterested motives of self gain, and for firmly endeavoring to definitely establish the principle involved.

St. Louis, October 28, 1869.

We had a meeting last night and unanimously adopted the following:

Whereas, We have heard of the movement of the operators of the Franklin Telegraph Company. Resolved, That we tender our earnest sympathies to our New York brethren engaged in the movement. Resolved, That we will sustain them as far as possible by our sympathies, and by such pecuniary aid as we may be called on for.

Pittsburg, October 27, 1869.

We regret the cause that made such a movement necessary, but do not fear the issue. To this expression of our sympathy we will add sufficient guaranty by mail; meanwhile \$100 already speak our sincerity. No one from here will fill vacancies. Be sure you are right and we are with you.

Chicago, October 27, 1869.

Assure the Franklin operators of our sympathy, and pecuniary aid, if necessary.

On motion, Mr. KEITH, who had resumed work on Wednesday, again joined the operators on strike, and was exonerated from all blame, it having been erroneously represented to him, by the manager of the New York office, that the difficulty had been amicably adjusted.

A proposition from Superintendent SMITH, to increase the pay of first class operators to \$100 per month, and to let the others remain at the old rates, was then taken up, and after considerable discussion rejected, on the ground that as all grades of operators had participated in the movement a compromise of this kind would be manifestly unjust to all except the first class men. Mr. GEO. BAKER was then appointed to wait on Mr. WALLACE LEANING, the chief operator in the New York office, who had remained at his post for the purpose of exercising his influence in favor of the operators, and request his attendance. Mr. LEANING responded to the request, and in a few minutes presented himself. He expressed his concurrence in the movement, and his willingness to take every step directed by the meeting.

After a recess the meeting convened again at half past

two. The president stated that Mr. SMITH acknowledged that the strikers had gained their point, and recommended the appointment of five operators to return to the instruments, and relieve Mr. SMITH's embarrassments, temporarily, in order that a schedule of prices might be arranged. A resolution to this effect was then adopted, and Messrs. CORRY, LEANING, HUBBARD, CONNOR and SPRAGUE were sent into the office to resume work. Three men were also detailed to work city lines. The following despatch was then sent to co-operating offices, in order to prevent misunderstanding:

To BOSTON, PHILADELPHIA AND BALTIMORE OFFICES.

Five men, as delegates, sent at request of stockholders of the line to work while we interview Mr. JAMES G. SMITH, and receive his schedule, and whatever proposition he may make. We have also sent three men to work city line.

C. G. DE MOLL, President.

While the meeting was awaiting the action of the committee sent to meet Mr. SMITH the following despatch was received:

NEW ORLEANS, October 28, 1869.

To C. G. DE MOLL, and other Franklin Telegraph Operators, New York.

We commend and endorse the action taken by you, and feel a pride in the quiet and dignified way in which you have conducted the contest. With justice as a base, and dignity to govern your proceedings, you can always command both success and good will. Stand firm; we are ready with funds, if necessary.

OPERATORS OF NEW ORLEANS, LA., VICKSBURG, MISS., JACKSON, MISS., NATCHEZ, MISS., MOBILE, ALA., SELMA, ALA.

At three o'clock Mr. LEANING appeared and laid before the meeting the following note, which he had received from Mr. SMITH:

MR. LEANING—I am glad that the men have shown their sense of justice, and their confidence in the good will of the Company, by returning to the desks they left so suddenly, and with so little consideration of what was due to us. In view of this voluntary action on their part I am willing and determined to act in the fairest manner, and will meet yourself and a committee on their part, and will show you that I appreciate their action.

J. G. SMITH.

Mr. LEANING said, in explanation of this note, that there was no doubt that the pending interview would be pleasant, and all the operators now on strike would be satisfied with the terms about to be proposed.

A committee of three, consisting of Messrs. C. G. DE MOLL, W. LEANING and J. R. MILLS, were selected to meet Mr. SMITH, and a recess was taken until half past four.

Upon the re-assembling of the meeting Mr. LEANING, in behalf of the committee, presented the following schedule, arranged between themselves and Mr. SMITH:

New York, October 28, 1869.

C. G. DE MOLL, President.

As Chairman of the committee appointed to wait on J. G. SMITH, and offer for his consideration a schedule of salaries for the operators of the Franklin Telegraph Company, I beg leave to present the following report:

I have fixed the salaries of operators now getting \$83 per month at \$100 per month, being an increase of not quite 21 per cent. Those getting \$75 are raised to \$85, \$70 to \$80, \$65 to \$75, \$60 to \$70 and \$50 to \$55; these last getting about 15 per cent. increase. This is an increase of over nineteen per cent., and reinstates all the men now out in New York, Boston, Philadelphia and Baltimore. Your committee have Mr. Smith's guarantee that this shall be faithfully carried out on his part, and we recommend that the men all go to work at once, with the determination to give the company a hearty support, and faithfully conform to all rules and orders from the company.

WALLACE LEANING, Chairman.

Approved, J. G. SMITH, Sup't.

The above schedule was unanimously accepted by the meeting, and three cheers were given for Mr. SMITH. The following despatch was at this moment received and read:

BALTIMORE, October 28, 1869.

C. G. DE MOLL, President.

Men here waiting to hear from you if they shall go to work. They understand all is fixed, but won't stir till they hear from you. Telegraph at once.

Resolutions condemning the conduct of Mr. C. H. BURD, the Boston agent, in the most unqualified manner, were passed unanimously. Resolutions of thanks were also

passed to Mr. LEANING, the officers of the association, the press, and the operators in other cities who had supported the movement, and also declaring that if any operator was hereafter dismissed on account of participation in the strike, the operators would again quit their instruments, and instructing Mr. LEANING to notify the Superintendent that the operators had accepted the schedule, and would return to duty the next morning at eight o'clock. The meeting then adjourned *sine die*.

The following despatch was then sent to all offices connected with the movement:

NEW YORK, October 28, 1869.

We have concluded a satisfactory basis of agreement with Mr. SMITH, which guarantees the reinstatement of all operators participating in the movement, on the same terms as ourselves. You are therefore instructed to report for duty to-morrow morning.

C. G. DE MOLL.

This terminated the difficulty, as far as the Franklin Company and Mr. SMITH are concerned. Sentiments of renewed good feeling were freely and unreservedly expressed by all present, and it was apparent to the most casual observer that the efforts which would in future be made by the Franklin operators to increase and expedite the business of the line, will much more than compensate for the additional expense caused by the advanced schedule of prices.

We learn that ineffectual efforts were made on Thursday to induce some of the female operators in this city and elsewhere to fill the places of the strikers. They one and all declined to do so, although, in many cases, they would have received much more than their present compensation. It is to be hoped that this generous and noble conduct on their part will be duly appreciated by their brother operators. But for the stand taken by them the contest might have been prolonged for a considerable time, to the manifest injury of all parties concerned.

It is related that the irrepressible BURD, who filled the Boston papers with his falsehoods and proclamations, stated, among other things, that he was in future determined to employ female operators, as they were far more efficient than those of the other sex, and that whenever they had taken the place of a man or a boy the receipts of the office invariably increased and the expenses diminished. We trust, therefore, that BURD will pay them accordingly. A good joke, in connection with the affair, consists in the fact that BURD advertised for twenty young women "operators," omitting the word "telegraph." His office was thereupon completely besieged with applicants, who all professed to be operators, but who had unfortunately never before seen the inside of a telegraph office, however familiar they might have been with the WHEELER & WILSON or GROVER & BAKER instruments. The few genuine lady telegraphers who put in an appearance were aghast at the sight of the crowd of applicants, and fled from the scene without tarrying to make further inquiries. The result, however, would not have been difficult had they succeeded in "interviewing" the individual of porcine characteristics.

The following is a complete list, as far as heard from, of the operators who accepted places, temporarily or otherwise, made vacant on the Franklin Company's lines, during the recent strike:

E. THORNE,	New York.
W. H. WANDLE,	"
A. J. HATCH,	"
F. H. WHITTLESEY,	Hartford.
J. A. WRIGHT,	Trenton.

The following operators of the Franklin line refused to acquiesce in the strike.

W. B. CLUM,	New York.
EDWARD GIBBONS,	"
F. W. BENSON,	Boston.
KENNEDY DUFF,	Baltimore.
FREDK. HUTCHINSON,	Boston.
C. CUNNINGHAM,	New York.

[Written for THE TELEGRAPHER.]

THE AMERICAN INSTITUTE FAIR. ELECTRICITY AND ITS APPLICATIONS. IV.

The application of electricity to time keeping is something of a novelty to the American public, although it is by no means a recent invention. BAIN, WHEATSTONE, BREGUET, JONES, SHEPHERD, and other electricians of more or less note, have turned their attention in this direction with varying success. The principles involved in these different inventions may be resolved into two—BAIN's clock being the type of one class and SHEPHERD's that of the other. In BAIN's arrangement the pendulum is oscillated by the combination of a permanent steel magnet with a helix, the former being placed upon the bob of the pendulum, and the latter so situated, in reference to it, as to produce intermittent repulsions, or alternate attractions and repulsions. In SHEPHERD's arrangement the vibrations of the pendulum are caused by the recoil of a spring or weight, after having been actuated by the electromagnet at each vibration. Of the two clocks on exhibition one is

KENNEDY'S ELECTRIC CLOCK,

which is not only constructed upon the principle of BAIN, above referred, but in the details of its arrangement seems to be almost an exact copy of BAIN's, as far as the electrical action is concerned. Such being the case, it is open to the objection that has always been urged against its prototype, viz: that the constancy of its impulses depends entirely upon the constancy of the electric action of the battery, and any variation in this current, or in the magnetism of the permanent steel bars, must alter the rate of the clock. That such is the case is evident from the fact that the one in the exhibition varied nearly four minutes during the four hours that the writer remained in the building. This clock is of splendid workmanship, and attracts much attention. The bob contains a permanent magnet, the ends of which swing into a fixed helix at each extremity of the arc of vibration, the permanent bar being alternately attracted by one helix and repelled by the other, and *vice versa*, according to the polarity of the current, which is changed at each vibration by a sliding commutator, operated by the pendulum rod.

BRADLEY'S SYSTEM OF ELECTRIC CLOCKS.

This consists of a primary clock, which is electrically connected with several secondary dials, the number of which may, of course, be multiplied indefinitely. This primary clock is driven by an electro-magnetic engine, which rotates an upright shaft carrying an endless screw, which works into a toothed wheel attached to the seconds hand shaft, the other hands being geared thereto in the usual manner. The upper part of the upright shaft carries a slotted arm, which causes the conical pendulum to swing round in a circle. The circuit of the electro-magnetic motor is carried through this pendulum and slotted arm, and the electric connection between the two is so arranged that if the motion tends to become too rapid the pendulum is thrown out by centrifugal force far enough to break the circuit, and thus check the velocity of rotation. This maintains the movement of the pendulum at an absolutely uniform rate. The circuit of the secondary clocks is closed once every minute by an arm on the shaft of the seconds wheel; this causes the armatures of the secondary clocks to be attracted, and so cause a parol acting upon a ratchet to move the minute hand.

Thus any number of secondary clocks can be worked from one battery, and made to keep time with the primary clock. A great advantage is gained over other electric clocks heretofore invented in the application of the conical pendulum, as its momentum remains uniform throughout the whole revolution, while that of the vibrating pendulum is checked at each oscillation by the friction or resistance of the apparatus for closing the circuit. The system shown in the fair worked exceedingly well, and, as far as was observed, the time kept by it was according to "Benedict." There are many points of absolute novelty in Dr. BRADLEY's system, and its further development will be watched for with great interest.

F. L. P.

Telegraphic News.

A PROSPECTUS has been issued of the Home and Foreign Telegraphic News Company (limited), with a capital of £20,000, in shares of £5, to carry on and extend the useful functions hitherto performed by the intelligence department of the Electric and International Company, after that Company shall have been absorbed in the government scheme. It was the business of the department in question to supply news-rooms, chambers of commerce, newspaper proprietors, and the public generally, with abstracts of all the commercial and general intelligence transpiring from hour to hour—*London Engineering.*

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congratulations to the Strikers.—A Word for Burd.

BOSTON, Nov 2d.

TO THE EDITOR OF THE TELEGRAPHER.

To the Franklin Telegraph strikers greeting, and congratulations.

The first Telegrapher's strike—the first contest between labor and capital employed in telegraphing—terminates with a victory for labor. A most effective step toward the recognition of their own power has been taken by the telegraphers; something more has been won than the mere increase of salaries asked for.

The result will strengthen among telegraphers confidence in themselves and in each other, and will bring this fact home to their minds, viz., that there is no body of workingmen in the United States possessed of such complete power to enforce just and reasonable demands as they.

Here in Boston but four operators stopped work, but they rightly counted on the sympathy and support of all engaged in the business in this city. C. H. Burd, Gen'l Agent of the Franklin Co., published several cards in the papers here, declaring that none of the strikers would be taken back—that the business of the Company was in no way retarded, and that they had merely got rid of a lot of rubbish. He advertised for twenty female operators, and the next morning the office of the Company was besieged by women seeking employment. Evidently the advertisement was misunderstood, for not one of them understood the telegraphic a, b, c. Poor Charley was beset by girls to the right of him, girls to the left of him; girls of the period and toothless old maids bored him with questions, and clamored for situations, until finally driven to desperation he promised to establish a school for their instruction, and when they became first class operators, to employ them all at a salary of \$1,000 per annum. They finally left, in the full faith that in a few weeks they would be fully initiated into the dot and dash business, and are now anxiously awaiting the notice which shall call them to their first lesson.

The strikers here have not yet been reinstated—Burd refusing to employ them—but it is understood that they have the promise from Supt. Smith, who is undoubtedly sustained by the President of the Company, that their salaries shall be paid them here until other and satisfactory arrangements can be made.

It is apparent that the differences which the "strike" has caused between Burd and some of the Boston Directors, on the one hand, and Smith and President Ellery on the other, must be settled before the affairs of the Company can move on harmoniously. "A house divided against itself cannot stand."

It seems to me that the New York strikers complicated the case unnecessarily, and added nothing to the strength of the movement by ordering the Boston members of the Association, who, I understand, were satisfied with their pay, to stop work. New York office being without operators, the Company would be no better off with a full force in Boston—on the contrary, it was an advantage to the Company to get rid of paying for the time a number of idle men.

If good counsels prevail the successful termination of the strike will lead to the building up of an association of telegraphers, embracing nearly every operator in the country, powerful enough to secure for each and every one fair treatment and just remuneration for services rendered.

I am sure it would have been better for all if the N. T. U. had been sustained and made the basis of a protective league. It has money in its treasury, and a majority of its members can control it. Had the Union been sustained it would now have in its treasury ten or fifteen thousand dollars, and no member would have been the poorer. No one can doubt that such a sum would prove a powerful ally to any association engaged in a strike.

I see by THE TELEGRAPHER that the strikers in New York, among other resolutions, passed one reflecting rather severely on Mr. Burd. They ought to remember that there are two sides to every question, and should be as charitable as possible to those who differ with them. The Franklin Company have never paid a dividend; were it otherwise I am sure Mr. Burd would be more liberally disposed.

I trust those engaged in the strike, now that their claims have been conceded, will apply themselves more closely than ever to their duties, and prove by their works that the cheapest labor is that which is best paid.

REVERE.

Rejoicings over the Victory.

WASHINGTON, D. C., Nov. 2.

TO THE EDITOR OF THE TELEGRAPHER.

THE strike of the Franklin line operators last week excited most interest, and caused great excitement among the fraternity here. Although the movement was entirely unexpected to us, the Washington telegraphers did not hesitate a moment to tender the strikers their entire support, moral and pecuniary.

The announcement of the success of the movement was received with much rejoicing by the entire telegraph force here.

The bill regulating and increasing the salaries of the fire alarm and police telegraph superintendents and operators, which has been before the City Council for the past six or eight months, and which at one time was thought to have been effectually killed, was again brought up in the Board of Common Council last evening by Mr. Burgess. Both the friends and opponents of the measure are determined and active in their efforts to pass or defeat it, but, from information recently obtained, it is believed the chances for its passage are improving. The increase asked for is no more than just, and it is hoped that the council will now act favorably upon it.

In the Board of Aldermen, Oct. 18th, the bill to extend the fire alarm and police telegraph to the Washington asylum was passed.

SPRING.

Reply to Pittsburg Operators.

WASHINGTON, D. C., Oct. 26.

TO THE EDITOR OF THE TELEGRAPHER.

THE latest "ventilation" from Pittsburg, in THE TELEGRAPHER of last week, savors of smoke and smells foul. The letter has excited some curiosity among the fraternity here, as to the identity of the "well known telegrapher" who was "interviewed" by "Pittsburg operators," in reference to the management of affairs here, &c. I do not desire to have any controversy in THE TELEGRAPHER, but simply wish to give my own personal experience in both Pittsburg and Washington offices, and that only because I am one of two telegraphers from Washington who recently visited Pittsburg, and in consequence get some credit for being the person referred to by your correspondent.

I wish to publish the fact that I am not "a well known telegrapher," and, if I had been quoted by "Pittsburg Operators," it would have been on the other tack entirely.

I worked one year in Pittsburg, the hours being from 7 A. M. until 6 P. M., and eat my dinner in the office during the time daily. My time here has seldom exceeded eight hours daily work without receiving extra compensation, and has not, for a month past, averaged more than seven hours per day. The salary here is 20 per cent. better than received at Pittsburg, and I have received from the cashier as much as \$30 extra for one month's pay.

As I have before stated, this is my own experience, and I would have it understood that I am only giving a few facts, and do not propose to defend the Western Union Company in THE TELEGRAPHER, simply, but am disposed to be just and fair, giving only a plain statement of the matter.

PLANCHETTE.

Dominion Telegraph Matters.—A Plug Factory Played Out.

TORONTO, Oct. 19.

TO THE EDITOR OF THE TELEGRAPHER.

THE telegraph business of Canada has been unusually lively during the past summer. Mr. James Poustie, the experienced Superintendent of Construction of the Montreal Company, informs me he has built eighteen hundred miles of line in different parts of the Dominion. Some of this was reconstruction, but the greater part, I understand, was entirely new.

The Dominion Company have only built (or rather they are now building) as far east of here as Oshawa, thirty-five miles. It is not yet definitely determined whether they will go on to Ottawa this season or not.

The People's Telegraph Co., under the management of Mr. Frank Drummond, have their lines in operation from Quebec to Ottawa. You will see by this that Canada is not behind in telegraphic competition.

I copy the following from the *Toronto Telegraph* of yesterday: "The Hon. William McDougall arrived on Saturday at St. Cloud, Minnesota, en route to Red River. On his way he had an interview with prominent telegraph managers, and concluded arrangements for the extension of a line of telegraph to Fort Garry. The contracts for poles are to be given out at once." It would be interesting to know who the above "prominent telegraph managers" are.

Johnny Skae, the rich telegrapher from San Francisco,

was married a few weeks ago to a Miss Warren, of Oshawa, Ontario. The happy pair immediately started on a tour through the United States.

Mr. Martin Ryan has resigned his situation as superintendent of the Dominion Co.'s lines and has gone West. Mr. Hugh Neilson, manager of the Toronto office, has been appointed superintendent, *pro tem*.

The McEachren plug factory here is in a bad state of decline. I understand the proprietor actually offered his services to a telegraph company, on their advertising for a superintendent for their lines. "How are the mighty fallen!"

LOCAL.

The P. and A. in the Oil Regions.

TITUSVILLE PA., Oct. 18th.

TO THE EDITOR OF THE TELEGRAPHER.

NOTICING an article in THE TELEGRAPHER of the 16th inst., regarding the "Oil Regions" and "Operators," over the signature of "Whoopstap," in which he expatiates at some length on the promptness of the W. U. office here, with its three operators, etc.

I deem it my duty to say a few words in behalf of the Pacific and Atlantic Co.'s office here, which is under the management of Mr. W. A. Stevely, with Mr. A. Grape as assistant. Since they have been here the Company were obliged to construct two additional wires to accommodate the increasing business, and have fitted up the finest office in the "Regions." Since Mr. Stevely took charge the W. U. have changed their entire force here three times, in hopes to recover the business they have lost, and have as yet proved unsuccessful. In speaking of the way they rush business "W." belies himself thus: "We make a practice of snatching the message from the customer's hand, nearly tearing it to pieces, and rush frantically to the table, to rush it with all force." If he had said all four he would have come nearer to it, as "Operators" don't generally spread themselves in that way. This shows conclusively that the P. and A. makes it lively for them, and if they continue to do the business with their present promptness the W. U. will have to rely on business where the P. and A. have no office for support.

AN OUTSIDER.

Unreliability of "Some Dots."

SAN FRANCISCO, Oct. 16.

TO THE EDITOR OF THE TELEGRAPHER.

YOUR correspondent, "Some Dots," is not reliable. He reports F. S. Van Valkenburgh as having been appointed assistant superintendent, to fill the vacancy occasioned by the death of W. R. Youtz, when such is not the case. Mr. Jas. S. Urquhart has been appointed assistant superintendent of this district to fill that vacancy. It is but justice to both that this correction be made.

ONE DOT.

TO CORRESPONDENTS.

OWING to the pressure upon our columns, several communications received, and filed for insertion, are necessarily omitted this week.

KEHAW.—Will be pleased to receive any items of news of interest to the telegraphic fraternity.

PERSONALS.

C. G. DE MOLL, for some years past with the Franklin Company, in this city, has been appointed night manager of the Philadelphia office of the same Company.

The present address of Mr. PARKER SPRING is desired by friends.

Miss FRANK FOSTER has resigned her situation on the Gold and Stock Telegraph Company, and will take a vacation for the present.

Mr. G. EDGAR NETHERLAND, late of the Chesapeake and Ohio Railroad office at Richmond, Va., has accepted a position as night operator in the Western Union office at Louisville, Ky.

Mr. GEORGE COWLAND, formerly of the New Orleans Western Union office, is Secretary to Gen. B. F. Butler, at Washington, D. C.

Mr. P. O'BRIEN, of the New York Western Union office, has accepted a situation in the Augusta, Ga., office of the same Company.

Mr. J. M. BARNETT, late of the Franklin street B. & B. office, has taken a position in the Western Union, 145 Broadway.

Mr. RALPH W. POPE takes charge of the Franklin street B. & B. office, *vice* BARNETT, resigned.

Mr. A. F. WILMARTH, President of the Atlantic and Pacific Telegraph Company, has been spending the last few weeks in Virginia and Maryland, deer hunting.

Mr. J. W. DYER, Superintendent of the B. & B. Telegraph Company, and Mr. GEO. ELLERY, President of the Franklin Telegraph Company, visited Washington this week on business of their respective Companies.

Mr. W. W. BURHANS has been transferred from the Western Union main office, at 145 Broadway, to the office at No. 21 Wall street.

THE TELEGRAPH.

Official Statement, Western Union Telegraph Co., for September.

	Sept., 1869.	Sept., 1868.
Total Receipts.....	\$869,706 79	\$602,665 36
Total Expenses.....	419,729 29	372,197 50
Net Profits.....	\$249,977 50	\$258,467 86

The Great Western Telegraph Company.

MR. JOSIAH SNOW, the President of the Great Western Telegraph Company, is in this city temporarily, on business of his Company. Mr. Snow states that his line is rapidly extending to Omaha, and is developing a first class business.

The Great Western Company's lines are constructed exclusively of compound wire, and Mr. Snow is enthusiastic in his commendation of this great telegraphic invention, the advantages of which far exceed the increased expense of construction attending its use.

The Union Pacific Telegraph Line.

AN Omaha, Nebraska, correspondent writes us that Mr. Dickey, the Gen. Supt. of the telegraph for the Union Pacific Railroad, is putting additional force on the line, and intends making it a first class line in every respect.

Superintendent Lehigh Valley Lines Appointed.

MR. HOMER CLUTE, formerly of the American Telegraph office in this city, but more recently manager of the Western Union office at Scranton, Pa., has been appointed superintendent of the Lehigh Valley Railroad Telegraph lines, with headquarters at Mauch Chunk, Pa. Mr. Clute has been engaged for the past year constructing lines for this Company from Pittston, Pa., to Waverly, N. Y., and along the Hazleton Division.

The Telegraph in Chili.

ADVICES from Valparaiso, Chili, of Sept. 3d, states that the new telegraph line will soon become an accomplished fact. It is to be a double line, and is to start from Valparaiso, passing through the capital, Santiago, Santa Rosa and San Felipe, crossing the Andes at the mining town of San Juan; thence to Villa Maria, where it will join the line already established from Rosario to Cordoba, passing through Mendoza, San Luis, and thence to Buenos Ayres, thus connecting the Atlantic and Pacific coasts of South America via the Cordilleras. The contractors for the line, Messrs Clark, & Co., of this city, have been granted a subsidy of \$3,000 by the Argentine Government, and it is to be completed within twenty months after the signing of the contract. Many benefits are expected to accrue to Chili from the establishment of this line, as affording more ready communication with the markets of Europe and the Atlantic coast.

The Post-Office and the Telegraph.

IN connection with the transfer to the government of the properties of the telegraph companies, a meeting was held Tuesday, Oct. 5th, with Mr. James, head postmaster, at the General Post-Office, Glasgow, Scotland, with the object of ascertaining what arrangements, including alterations in the chief and other offices, would be necessary before the Post-Office Department could take over the telegraph business. The meeting was attended by Mr. Scudamore, second secretary to the Post-Office, who visited Glasgow for the purpose mentioned, accompanied by Mr. Baines, of the Secretary's office in London, Mr. Williams, of the Board of Works in London, and Mr. Mathieson, of the Board of Works in Edinburgh. The meeting was also attended by gentlemen representing the telegraph companies in Glasgow.—*Engineering.*

Cooper Institute.

THE trustees of the Cooper Institute for the Advancement of Science and Art, announce that, having made arrangements with the Western Union Company to supply the necessary apparatus and instruction, they have decided to establish a free school of telegraphy for young men. One of the conditions for admission is that applicants should be willing to accept small offices, and small pay, on the Western Union lines, out of the city, as soon as they are qualified.

TELEGRAPHIC BREVITIES.

MR. GEORGE WALKER, of Springfield, Mass., will enter at once upon his duties as Vice-President of the Western Union Telegraph Company, spending most of his time in New York.

Hereafter telegraphic messages in France will be transmitted, at the rate of one franc for twenty words, between any two stations in the same department.

The report of the Commissioners to examine the Pacific Railroad has just been published. The Commission, in referring to the telegraph line, says of the Central Pacific road: "The telegraph line is well constructed, and is supplied with a sufficient number of stations." And of the Union Pacific: "The telegraph line and stations are sufficient for present purposes, though many of the poles are not of the most durable material."

Another Bull.

AT one of the city offices recently a message was received directed to ———— *Three Oaks and Lincoln*. Upon a request for better address it was found to be meant for *Brooks and Lincoln*.

From The Warsaw New-Yorker, Oct. 14.

A Sad Blunder by the Telegraph.

ON Tuesday a telegraphic dispatch was brought to our station by a conductor—it is thought from Attica—addressed to George H. Dunham, Esq., of Orangeville. It was sent from Jamestown, and announced to him that "your wife's body is on the train—meet it at Warsaw." He had left his wife at Jamestown on the Friday previous, in perfect health, to come to the bedside of his dying brother, and the despatch was handed to him just as his brother's body had been buried, at Orangeville. His consternation and anguish can scarcely be imagined. The hearse in attendance was directed to come to the station and receive the body. When the train arrived Mrs. Dunham and her little son stepped off, alive and well! It then appeared that he had been telegraphed that his "wife and boy" would be on the train, and wished to be met at the depot.

New Patents.

For the week ending Oct. 26, and each bearing that date.

96,090.—TELEGRAPH APPARATUS. Charles Durant, Jersey City, N. J.

I claim, 1. So combining a relay machine, and one or more batteries, or other electrical supply with a telegraph instrument, that when, by the operation of the instrument, the main telegraph circuit is opened and closed, another circuit, communicating with the same relay machine, will be correspondingly closed and opened, and the attractive power developed in the relay magnet be thereby modified, substantially as described.

2. The conducting spring E, or its equivalent, in combination with a telegraph instrument, for the purpose described.

3. The lever button Q, operating as described.

4. The combination of the screw J with the lever key D and spring I, substantially as described.

5. The employment of the insulated adjusting screw S' in combination with the spring E, substantially as described.

No. 96,198.—INSULATOR FOR TELEGRAPH WIRES. Charles A. Bush, New London, assignor, for two thirds of his right, to Henry P. Ostrum and T. Clifford Bush, New Haven, Conn.

I claim, 1. The rubber cap or covering for the bracket or pindle, substantially as and for the purpose hereinbefore set forth.

2. The rubber lining for glass, porcelain, or other non-conducting substance, substantially as and for the purpose hereinbefore set forth.

No. 96,194.—LIGHTNING ROD POINT. John F. Boynton, Syracuse, N. Y.

I claim, 1. A lightning rod point, with compound corrugations, and constructed as above described.

2. The compound corrugated point, combined with a swagged ferrule or tube, for connecting it with the rod.

No. 96,199, patented in France, May 19, 1858.—GALVANIC BATTERY.—Jean Armand Callaud, Nantes, France.

I claim, 1. The combination and arrangement of the jar A, zinc B, hooks b' b' rod c, rubber tubing E, and sheet copper D, in the manner and for the purpose herein described.

2. The combination and arrangement of the devices above mentioned, in the form and proportions herein described.

No. 96,268.—LIGHTNING ROD. William S. Reayburn and F. J. Martin, Philadelphia, Pa.

We claim, as an article of manufacture, a section of lightning rod composed of a sheet zinc centre, bent upon itself in webs, and a copper covering, similarly formed, substantially in the manner and for the purpose described.

WANTED.

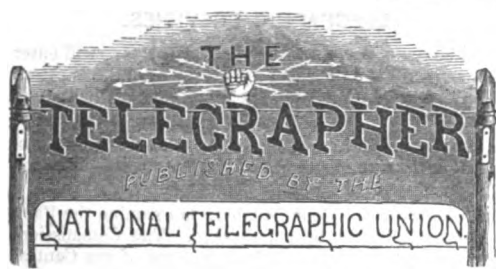
the present address of FRED M. CONOVER, late operator at RAWLINS, Wyoming, who came East about the 1st of August.
AN OLD CHUM.

BORN.

LONG.—At Huntingdon, Pa., to Wm. C. LONG, operator at P. & A. Telegraph office, Baltimore, Md., a son.

MARRIED.

BURKHOLDER.—CUNKLE.—At Huntingdon, April 13, 1869, by the Rev. Mr. WILSON, Mr. J. J. BURKHOLDER, operator in the Pennsylvania Railroad Company's telegraph office, Harrisburg, Pa., to Miss KATE E. CUNKLE, of Harrisburg.



SATURDAY, NOVEMBER 6, 1869.

J. N. ASHLEY.....Publisher and Editor.

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THE TELEGRAPHERS' STRIKE.

THE strike last week of the operators of the Franklin Telegraph line, which, as our readers were informed, terminated successfully, has excited much interest. It has demonstrated several facts, which have heretofore been doubted, even by those who were best acquainted with telegraphers. It has shown that telegraph operators can be relied upon to stand by each other in the enforcement of their just demands and rights. Notwithstanding the most strenuous efforts the managers of the line were unable to obtain operators to fill the vacancies caused by the refusal of their employés to work until their demands were complied with. This is most creditable, especially to those who were out of employment; with one or two exceptions these refused to accept the offers made them, some declaring that they would black boots or carry hods for a living before they would be used to deprive their professional brethren of situations and compensation to which they were justly entitled. In this connection the highest praise is due to the female operators, who, notwithstanding they had been to a certain extent ignored by their professional brethren, unanimously refused to accept situations on the Franklin line while the contest was undecided. As a consequence of this exhibition of interest in the cause of the profession, and *esprit du corps*, there has been a decided reaction in the feeling towards women operators, and those who have heretofore been most earnest in their opposition are disposed to regard them with more kindly feeling and appreciation. They have shown that they are one with their brother operators, and so far from being disposed to aid in reducing their compensation and privileges, may be relied upon to co-operate with them in any proper measures for their increase and improvement.

The result of this strike has shown the power of the operators to compel justice being done to them. For three days business was practically suspended on the Franklin line, and had the stupid policy advocated by its Boston General Agent, a person by the name of BURD, been adopted, the line would have been permanently closed.

The strike has also shown that operators are disposed to be reasonable in their demands, and willing to accede cheerfully to any fair proposition in case of disagreement with their employers. Had the terms finally offered been tendered and agreed to in the first instance, there would have been no strike at all, and the public would have known nothing of any difference between the operators and managers of the line.

The principal patrons of the Franklin line, notwithstanding the temporary inconvenience they experienced, heartily approved and endorsed the course of the operators, and urged them to hold out to the end.

The active sympathy of telegraph operators all over the country, from Maine to California, was abundantly manifested, and offers of material aid, sufficient to sustain the strikers for weeks and months, were freely tendered. Over four hundred dollars in cash had been received by the Treasurer when the strike terminated, and a large amount in addition, which was hourly increasing, was pledged. This fact is most gratifying and encouraging, when it is considered that the pay of operators is not by any means such as to leave them a surplus above the amount required to defray expenses of living. The strike was happily of short duration, and the assistance tendered was not needed, but it was none the less sincerely offered, and would have been forthcoming.

We approve of the course taken by the Franklin line operators because their demands were reasonable and just. They had been promised a remedy for the injustice under which they suffered for months, and had forborne to resort to extreme measures until forbearance had ceased to be a virtue.

Mr. JAMES G. SMITH, the Superintendent of the line, although he vigorously sustained the side of the Company, when at last he did give way, accepted the situation frankly and fully. Although the contest was active and bitter while it lasted, yet the operators, appreciating the difficulties and embarrassments of his situation, retain no unkindly feeling towards him, nor do we believe that he has any animosity or unkindly feeling towards them. He is an operator, has risen from the ranks, and, of course, cannot but sympathize with operators, however antagonistic his position may have forced him to appear.

Mr. CHARLES H. BURD, of Boston, Mass., General Agent, has shown himself an entirely different style of man, and we hope every operator will mark him for the future, and that his connection with telegraphing, in any capacity, may be brief. It is a question whether telegraphers should consent to work on a line with which he is connected, but, perhaps, for the present it is not advisable to manifest any active hostility to him while he remains buried in the fitting obscurity which now surrounds him. His characteristics, as shown by his course last week, and since, are reckless and stupid obstinacy and pigheadedness well calculated to work the ruin of any enterprise with which he may be, unfortunately for the stockholders, connected. Any advancement beyond his present position would be sufficient cause for the declaration of more determined hostility on the part of the employés of the line, and in such case they may rely upon the effective support of THE TELEGRAPHER.

When the terms of compromise were agreed upon, the operators returned to their desks with expressions of hearty good will for their Superintendent and the Company. They expressed their determination to do all in their power to advance the interests of the line, and to compensate by increased diligence the advance in the expense of the line consequent upon increased pay. This disposition is highly commendable, and cannot but prove largely beneficial to the business. Hereafter, instead of unwilling and discontented workers, each man will regard the interests of his employers as his interest, and we look for a very different condition of things on that line than has heretofore existed. While the nominal expense of the business is considerably increased, we doubt not that the greater diligence and economy of time on the part of the operators will more than compensate therefor. We shall watch with interest the economical results of this movement.

It is highly gratifying that this, the first determined effort of telegraph operators to enforce compliance with their reasonable demands, has met with such complete success. Strikes are, or should be, the last resort of intelligent workers, but they are sometimes, as in this case, indispensable. We would exhort telegraphers always to exercise reason and moderation in their demands, and in no case to resort to extreme measures until all others have failed. But when, after long suffering, and the exhaustion of all other means to secure justice, they seek to

compel compliance with their requests, let them always, as in this instance, act unitedly and determinedly, and they must, as now, meet with speedy and complete success.

The French Cable.

THE *New York Times* recently published a statement that an application had been made to the French Minister of the Interior by certain parties, whose names are, of course, withheld, representing the United States Continental Telegraph Company (whose existence thus for the first time is publicly manifested), for permission to land and operate a telegraph cable between some point on the coast of the United States and some point on the coast of France. The only possible reply to such an application was to the effect that an exclusive privilege to land a cable having been granted MM. ERLANGER and BATES, the latter request could not be accorded.

That this was what, in police parlance, is termed a "put up job," to make a case against the French Cable Company for presentation to Congress, as an argument for legislative withdrawal of the right to land and operate the cables of that company on the United States coast, is very evident.

The *Times* goes on to state that a memorial has been addressed to the State Department, demanding of our government to suspend the authorization granted to work the French cable until the French authorities concede a similar privilege to the memorialists, and hopes that, if Secretary FISH does not stultify himself as desired, Congress will take immediate action in the premises.

The subject of reciprocal concessions between this country and France is a proper subject for diplomatic negotiations. Until the matter is settled by an arrangement between the two governments, of course it is useless for "eminent citizens," or any others, to get up bogus cable companies and apply for permission to land improbable cables on the French coast.

Before making the application referred to, if it was honestly intended to lay a cable, the proper course would have been for the projectors to obtain a waiver from the French Cable Company of its exclusive concession. Had this been done or applied for, and the permission then refused, the case presented would have been much stronger. The trick is too stale, and will not have the desired effect.

Extension of the Pacific and Atlantic Lines to New York.

THE Pacific and Atlantic Telegraph Company have extended their wires from Philadelphia to this city, and have established their office at No. 23 Wall street. The office has been fitted up in good style, and the P. and A. Co. start here under favorable auspices. Mr. M. K. THOMPSON has been appointed manager, and Mr. T. T. DENNIS chief operator; both of whom are well and favorably known as telegraphers and business men. Messrs. A. H. SEYMOUR and DANIEL J. HERRIGAN have also received appointments as operators.

The Company commence business here with three wires to Philadelphia, but immediately proceed to put up two additional wires, in order that the increase of business may be properly provided for. For the present only four offices will be opened between this city and Philadelphia; namely, at Jersey City, Newark, New Brunswick and Trenton, N. J. The Trenton office is in charge of the veteran telegrapher, Mr. JOHN A. WRIGHT, and Mr. ROUSSEAU is at present in charge of the Newark office.

The lines of the Pacific and Atlantic Company extend from New York to Philadelphia, Baltimore, Pittsburg, Cincinnati, Chicago, St. Louis, and down the Mississippi as far as Memphis, and are being rapidly extended to New Orleans.

Mr. A. Q. CASSELBERRY, the efficient Assistant Superintendent of the Pacific and Atlantic lines, has charge of the lines of the company east of Pittsburg.

The office No. 23 Wall street was formerly, for many years, the headquarters of the old "Union" or Morse line to Boston, which was eventually consolidated with the American Company (since itself absorbed in the Western Union). Subsequently the office was used for various purposes, at last reverting once more to its previous business.

Our Premium Offer.

We have concluded to extend the time for which our offer of premiums for subscribers to THE TELEGRAPHER will hold good to the 31st of December. In the newly developed interest of telegraphers, in the rights and well-fare of the profession which the recent successful strike on the Franklin line has so greatly intensified, the importance of an organ through which they may be heard; and their case fairly stated, and their just demand effectively sustained, is made so manifest that it will be a comparatively easy matter to secure subscribers to this paper.

It is of the first importance to the telegraphic profession that THE TELEGRAPHER, the only paper or periodical in the world published by, for, and in the interests of practical telegraphers, should be liberally supported.

Persons sending us subscribers, and desiring to avail themselves of the premiums offered, should state the fact when the first list is sent. Subscriptions may be sent in as obtained, and will be credited until such time as the claimants may choose to designate the premium desired and due for the total number of subscribers obtained.

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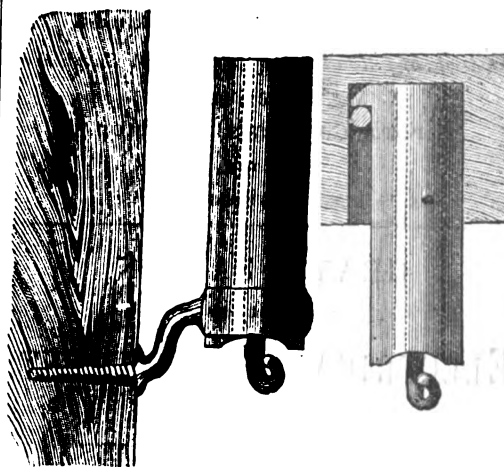
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This Insulator shows a resistance of 100,000,000,000 B. A. Units, excelling ordinary Insulators in humid weather fully one hundred thousand fold.

Its great strength and durability make it the most economical Insulator in use.

Every report received from them is of the most favorable character.

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made from Lake Superior Copper, warranted strictly pure, covered with Hemp, Flax, Linen, Cotton, Silk or other material, for Telegraph Instruments, Electro-magnetic Machines, Philosophical Apparatus, and all kinds of

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many Patterns, Plain, Woven and Braided. Parties being partial to any particular kind need only enclose a small specimen in letter, and it can be imitated in every particular.

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The Electro-Magnetic Watch Clock, which is the best Watchman's time recorder in the world.

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Having adopted the use of

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at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same.

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Button Repeaters.....	\$6 00
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All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package. He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

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104 Centre Street, N. Y.,
TELEGRAPH ENGINEERS,
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BATTERIES,
 AND EVERY DESCRIPTION OF
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This instrument is very effective, and with less complication than any other form. It requires no extra local battery, and it will be evident to Telegraphers, upon reading the following claim from the Patent of Mr. BUNNELL, that any other Repeaters whose Governors or "Extra Magnets" employ the same local battery that works the Sounders are infringing.

Claim First—"The employment of two Governor Magnets, placed in the same local circuits as the respective Local Sounders in a Telegraphic Repeater."

These instruments are now made in two different styles, at \$124 and \$135 a set, consisting of two Relays, two Sounders, two Keys, and Governor.

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a most compact and reliable Switch, forming a clean spring-locked connection between any number of wires, occupying for each different connection only one square inch of space, and though made of the largest size, not subject to the warp and contraction of wood-work.

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We are now prepared to furnish, after an experience of three years, an Insulated Wire, which can be buried in the earth or exposed to rain and sun, or to the vapor of acids, without injury. Professor SILLIMAN, who has exposed it to the most destructive agencies, finds that it remains uninjured in an atmosphere of ozone, which would destroy gutta-percha in a few hours. It exceeds glass or any other known substance as a non-conductor. We have made special arrangements to furnish this article for office purposes at a reduced rate.

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THE ELECTRIC TELEGRAPH,
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TELEGRAPH,
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We manufacture the Genuine ELECTROPOION BATTERY with Patent Platina Connection, introduced by us eight years since; also, THE ALPHABETICAL OR DIAL TELEGRAPH, now extensively used in this and other cities for private lines, being easily and quickly learned by any one.

We offer for sale, among other novelties, a "SOUNDER" that will work practically with a single DANIELL cell, a BATTERY that does not require to be taken down but once a year, and the very best MAIN LINE SOUNDERS made.

Our CATALOGUE, embracing a large amount of new matter and description, is now ready for distribution.

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GREAT INDUCEMENT TO WORK
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THE TELEGRAPHER

having proved so generally acceptable, and having met with so earnest a response, we have decided to present

A NEW LIST OF PREMIUMS,

even more liberal than those heretofore offered. From past experience, we think we are justified in anticipating, as a result of the following offer, that the subscription list of THE TELEGRAPHER will be

DOUBLED WITHIN THE NEXT THREE MONTHS.

The following Premiums will be open until December 31, 1869. All Premiums will be forwarded, PRE-PAID, to their destination. For 25 subscribers, we will give to the person sending the names and money a first class No. 1 Box Relay, warranted. For 15 subscribers, a No. 1 Telegraph Key, either Caton or Self-closing, as may be preferred. For 10 subscribers, a No. 1 Pony Sounder. For 6 subscribers, Pope's Modern Practice of the Electric Telegraph and Sabine's Electric Telegraph. For 3 subscribers, Pope's Modern Practice of the Electric Telegraph.

IN ADDITION TO THE ABOVE PREMIUMS,

we will give to the person who shall send us, by or before October 31st, 1869, the largest number of subscribers, not less than FIFTY, one of

DURANT'S SELF-ADJUSTING RELAYS,

OR

A CATON POCKET INSTRUMENT,

AS MAY BE PREFERRED.

It is understood that subscriptions to be counted for Premiums must be of persons not now on our books; that is to say, renewals of subscriptions will not entitle to participate in Premiums.

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TWO DOLLARS PER YEAR.

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A Journal of Electrical Progress.
 PUBLISHED EVERY SATURDAY
 BY THE
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SIXTH VOLUME.

The SIXTH VOLUME of THE TELEGRAPHER will commence with the issue for SATURDAY, AUGUST 28TH, 1869.

The Fifth Volume has proved more successful pecuniarily than any which has preceded it—the confidence of the fraternity in THEIR ORGAN, and in its intelligent devotion to the advancement of their interests, increasing from year to year, and securing for it a more general and united support from the practical Telegraphers of the country.

It will in the future, as in the past, maintain its reputation as in every respect

A FIRST CLASS TELEGRAPHIC NEWSPAPER.

It will continue to be, as heretofore, thoroughly independent of all Telegraph Companies or combinations; it will advocate, fearlessly and persistently, the just rights of the TELEGRAPHIC FRATERNITY, by whom, and in whose interests it has been established and supported. All matters relating to Telegraphy will be discussed in a progressive, independent and liberal spirit, and it will seek to elevate not only the scientific but the moral and social standard of the Telegraphic profession.

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of new and interesting inventions, and other subjects pertaining to Telegraphy, prepared expressly for its columns by able and competent artists. This is a feature possessed by no other Telegraphic journal in the world.

Experience, energy, industry and capital will all be combined to make THE TELEGRAPHER what it purports to be—a JOURNAL OF ELECTRICAL PROGRESS, and to render it worthy of the continuance of the liberal support which it has received from the profession and others interested in Electrical Science and Telegraphic Art, and to make it a creditable representative of the practical Telegraphic talent of the United States.

Correspondence, items of news or personal interest, and newspaper extracts relating to Telegraphic matter, are solicited. The co-operation of every person interested in sustaining a first class Telegraphic newspaper is cordially invited.

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One copy, one year,\$2 00
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Any one sending us the names and money for FOUR subscribers, at the regular price of subscription, two dollars per copy, will be entitled to receive an extra copy free.

Particular attention is called to the LIBERAL PREMIUMS offered in our premium advertisement to those who labor to increase the circulation of the paper.

Subscribers changing their residence, and desiring a change in their address, must always send their former address.

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One insertion, per line,15 cents.
 Each subsequent insertion, per line,10 "

No advertisement inserted for less than one dollar.

The following persons are authorized to receive subscriptions for THE TELEGRAPHER:

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 S. C. RICE, West. Union Telg. Office, Albany, N. Y.
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All Communications and Letters relating to, or intended for THE TELEGRAPHER, must be addressed to

J. N. ASHLEY,

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THE TELEGRAPHER.

JOURNAL OF ELECTRICAL PROGRESS.

Vol. VI.—No. 12.

New York, Saturday, November 13, 1869.

Whole No. 174.

[Written for THE TELEGRAPHER.]

CHARLES G. DE MOLL.

IN compliance with a request, on the part of many readers of THE TELEGRAPHER in various parts of the country, we take pleasure in presenting them with a portrait and brief biographical notice of a gentleman who took not only a prominent, but a highly honorable part in behalf of the telegraphic fraternity during the recent movement among the operators of the Franklin Company, with which our readers have become already familiar through the detailed reports published in this and other journals.

CHARLES GUSTAVE DE MOLL was born in Williamsburgh, Long Island, on the 28th of March, 1843, and is the son of A. J. DE MOLL, who has for some years been connected with the United States Treasury Department at Washington, D. C. We have been unable to obtain the particulars of his boyhood, beyond the fact that, like many others who have attained to eminence and usefulness, his early life was one of toil and struggle against adverse circumstances—a discipline, however, that is seldom without its advantages to that class of minds who are determined to achieve success, by earnest efforts to render themselves worthy of it.

In 1859 the subject of our sketch went to Philadelphia, to which city his parents had removed some years previously, and engaged for two or three years in mercantile and mechanical pursuits, the unsettled state of affairs, about the period of the breaking out of the war, rendering it a matter of much difficulty to procure steady and remunerative employment in any one pursuit. The great demand for telegraph operators, caused by the establishment of competing telegraph lines, and the number required for service upon the military telegraph lines, caused young DE MOLL to turn his attention in this direction, and he soon succeeded in mastering the art. He then proceeded to Washington, where he found no difficulty in obtaining immediate employment, especially as he was strongly endorsed by Gen. F. E. SPINNER, Treasurer of the United States, who had ever manifested a deep interest in his success and welfare. Subsequent to this he was employed in several different telegraph offices in Washington and Georgetown, until the year 1866, when he came to New York and accepted a position on the Franklin line, which had then just been built by JOHN W. LANE and others, and opened for business between this city and Boston. He has from that time to the present remained constantly in the service of that company, in different offices in this city.

Mr. DE MOLL was married, in 1868, to Miss JOSEPHINE M. BOWER, an estimable and accomplished young lady of Philadelphia.

When the Franklin operators determined upon making a decisive move, which should place them on an equality with their professional brethren employed on the other telegraph lines in this city, the unquestioned ability and integrity of Mr. DE MOLL caused him to be unanimously selected to preside over their deliberations, and to conduct the necessary negotiations with the officers in their behalf. How well he performed this delicate and difficult duty the complete success of the movement sufficiently demonstrates. This fortunate result was in no small measure due to the dignity and firmness of the presiding officer, which at once commanded the respect of the operators and the officers of the company.

His influence was successfully exerted to bring about an honorable and satisfactory settlement of the difficulty, and after this was accomplished he was active in urging all the operators engaged in the movement to give their hearty support and cooperation to the company, in order that the increased efficiency of the service might add to the business and receipts of the line an amount more than sufficient to compensate for the additional expenses incurred by the advanced scale of prices.

[Written for THE TELEGRAPHER.]

On some Points in the Construction of Telegraph Wires.

No observing person, who has passed through the city of Chicago within a few months past, can fail to have noticed the new lines of the Western Union Telegraph Company which have recently been erected in many of the principal streets of that thriving western metropolis. In most American cities, at the present day, the telegraphic lines form a very prominent portion of the street



CHARLES G. DE MOLL.

scenery, but it is very seldom that they are so constructed and arranged as to present a really ornamental appearance. But in Chicago the long ranges of tall white spars and symmetrically arranged cross-arms, extending in straight lines till they are lost in the distance, unquestionably add to the appearance of the principal thoroughfares. It is worthy of note that the superior character of these lines is manifest in their working qualities as well as their outward appearance. The improved BROOKS paraffine insulator is used throughout, something like 20,000 of them having been put up in the city of Chicago alone; they are also being largely used in other portions of the Central Division with the best results. The many improvements of this kind that are being made in the Central Division, under the vigorous and progressive administration of Gen. ANSON STAGER, will have the effect, within a few years, of making Chicago the telegraphic metropolis of the United States.

It is greatly to be regretted that the same appreciation and adoption of improvements of real and permanent value is not manifested by the officials in charge of the affairs of the Western Union east of the Alleghenies. Many new lines are being built, and many old ones re-

built in the Eastern Division, but without the slightest improvement in principle over those of a dozen years since. It is a common remark that, during a heavy rain, a much smaller proportion of the whole number of wires is available for business than was the case a dozen years ago; and, in view of the boasted improvements continually going on, the fact has been considered somewhat difficult to account for. When the matter is carefully investigated, however, the cause of the trouble is sufficiently obvious. The time-honored glass insulator of fifteen or twenty years ago still maintains its ascendancy, in various forms, some better and some worse than the original egg form of the old "magnetic line." But the ancient "egg glass" on an iron bracket, had its good points, although it has fallen into disfavor of late years. This will be seen upon a comparison of it with the style of construction in vogue at the present time between Boston and Washington. The glass insulator now employed is substantially that first used by the United States Company, being a sort of compromise between the "egg" of the Magnetic line and the well known "petticoat" or "umbrella," so much used a few years since. It is mounted upon a wooden pin, and has a tolerably wide opening underneath. The United States Company used to turn a collar upon the pin or bracket, which nearly filled the mouth of the opening, and prevented the rain from dashing in and wetting the inner surface of the insulator. By this means they secured the best results that have yet been attained in this country by the glass insulator. One wire put up in this manner, between New York and Boston, was quite remarkable for the excellence of its insulation in wet weather.

When the Western Union Company adopted this insulator they probably found the collar upon the pin too expensive, or else they must have had some personal objection to the inventor, whosoever he may have been, for they now put them upon pins without collars, and these upon cross-arms. The result of this arrangement is that the falling rain strikes the flat upper surface of the cross-arm, and rebounds in a shower of spray a foot or two in height, wetting the whole inner surface of the insulator, which is carefully arranged to facilitate this process as much as possible. In all cases where it can be done it is customary to put four wires on the same arm, from 12 to 20 inches apart, in order to facilitate the mixing of the currents from the different wires, when the insulators have become thoroughly wet. The number of poles per mile has been increased from 30 to 40, with no apparent reason except for the purpose of multiplying the number of points of leakage or escape. When we bear in mind the fact that the old egg insulators were narrow at the mouth, and that the iron hook supporting them was not large enough to dash any great amount of water into the cavity of the insulator during a shower, it will be seen that they possessed an important advantage over the pin and cross-arm arrangement, which advantage is also shared, in a great degree, by a properly fashioned wooden bracket.

Upon the Eastern Division of the Western Union, therefore, we find that, even with the admitted imperfections of the glass insulator, great care has been taken to secure the worst possible results from its use. A careful comparative test of these with the BROOKS insulator, used in Chicago and elsewhere on the Central Division, as well as with others in general use in this country and England, gives some very suggestive and instructive results. The experiments and tests, whose results are given below, were made at the factory in Philadelphia during a heavy rain storm, on the 10th of October, 1869. The insulators were exposed in the same manner as if in actual use, in sets of five, and the deflection per insulator given below is the average of the five. The leakage from each insulator is proportionate to the number of degrees of deflection. The following is the result of the test in a tabular form:

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Mr. F. J. HOWELL, formerly of the Junction Railroad at Indianapolis, has resigned his position at De Witt, on the Iowa Division C. & N. W. R. R., and accepted a place as operator in the train despatcher's office of the Louisville and Nashville R. R. at Louisville, Ky.

Mr. M. R. STOFF, the operator relieved by Mr. HOWELL, takes Bowling Green office of the same road.

Mr. WM. CASSELL, of Bowling Green, accepts an appointment in the train despatcher's office of the Memphis and Louisville Railroad at Clarksville, Tenn.

Mr. GEORGE R. FARRINGTON, formerly of the Erie Railway, at Corning, N. Y., has been transferred from Litchfield, Ill., to the Gen'l Supt's office of the T. H. A. & St. L. R. R., at St. Louis, Mo.

Mr. CHARLES IRWIN, the "veteran," from Vincennes, Ind., office of the O. & M. R. R., is working days in the same office, FARRINGTON being the "owl."

Mr. M. M. PRITCHARD, of Corning, N. Y., has gone to Sedalia, Mo., as operator and ticket agent for the Pacific R. R. of Missouri.

Mr. GEO. R. BROWN, of Corning, N. Y., has succeeded G. M. SMITH as train despatcher at Corning for the Tioga and Fall Brook Railroad, and is despatching about thirty trains daily.

Mr. GEO. M. SMITH is yet "in the woods," at White Hall, Mich., as superintendent of an extensive lumbering company.

Mr. JOHN POWERS succeeds Mr. DE BREE as night manager of the Louisville (Ky.) W. U. office.

Mr. KNAPP, formerly of the Omaha and Keokuk offices, has accepted a situation at the 145 Broadway W. U. office, in this city.

Mr. S. A. BLAIR, operator in the W. U. office, corner of Broadway and Chambers street, in this city, has been retired.

Mr. COOKE, formerly of Bridgeport, Conn., has taken a situation at No. 145 Broadway, W. U. office, in this city.

Mr. EARL J. RUDD, lately of Madison, Wis., has accepted a position in the Western Union Chicago office.

Mr. W. ARMSTRONG, of the Western Union Chicago office, has returned to Canada on a short leave of absence.

Mr. DENNIS BROWN takes a position in the Franklin Company's Boston office, vacated on account of the strike, "on different conditions."

Mr. GLIDDEN, of Cambridge, Mass., takes the situation on the northern line vacant through Mr. BROWN's resignation.

THE TELEGRAPH.

(By Atlantic Cable.)

The Belgio-American Cable.

PARIS, Nov. 6.—The concession for the proposed cable between the United States and Belgium was signed yesterday in this city by the Belgian Minister. The grantees are W. C. Barney, E. E. Paulding and J. S. Bartlett. The cable is to be laid from Ostend to some point between Maine and Georgia, by an American Company.

The Government Telegraph Schemers.

THE Washington correspondent of the *Boston Herald* telegraphs to that paper that parties engaged in the scheme for Government to take possession of the telegraph here, writes that they have bills prepared and pamphlets written for the coming session. The Postal Committee of the House reported against it at the last session, and it does not appear that the proposition has any more strength now than it had last winter.

Government and the Telegraphs.

AN expectation is prevalent that, after the meeting of the Cabinet Council, fixed for Tuesday next, some intimation will be given of the manner in which the Government proposes to raise the large sum which will be required within the next ten weeks for the taking over the electric telegraph system.—*Engineering*, Oct. 22.

The French Government and the Telegraph.

THE French Government, which controls all the telegraph lines in France, has just inaugurated a number of reforms in the administration of the telegraph which are likely to prove advantageous.

The tariff has been reduced to a uniform charge of one franc to any part of the empire. To meet the increase of business consequent upon this reduction telegraph facilities have been increased, numerous branch lines built, and the number of officers and of operators employ-

ed have been greatly augmented. The Hughes printing instrument has been substituted for the Morse at all important stations. By this the capacity of the wires has been greatly increased, as it actually transmits nearly double the number of messages transmitted by the Morse instrument, as worked in Europe.

Telegraphic Communication with Australia.

THE prospectus has been issued of the British-Indian Extension Telegraph Company, to construct the first important link of the communication between India and our Australian Colonies. This will consist of a cable of 1,756 miles, between Ceylon and Singapore, the capital of which will be £460,000, in shares of £10. A contract has been made with the Telegraph Construction and Maintenance Company, who are to complete the work, in the course of the coming year, for £440,000, taking £130,000 in shares. The Company will operate in conjunction with the British-Indian Telegraph Company, with whom a tariff has been arranged, by which the charge for a message of twenty words, from England to Singapore, will be £4 4s., of which the Extension Company will receive £1 7s. It appears that, of the whole messages hitherto passing over the Indo-European lines, about one fifth have been for Australia, China, Singapore, Java, and other places beyond Galle; and the calculation of the directors is that seventy-five messages each way may be expected daily, which, after deducting working expenses and a provision for a reserve fund, would yield 16 per cent. per annum. Meanwhile, negotiations are in progress with the Dutch and Australian authorities for concessions, and soundings are about to be taken for a cable route from Singapore to Hong Kong. Mr. Massey, late Finance Minister in India, is the chairman of the Company, and Col. Glover, Director-General of Telegraphs in India, is a member of the Board.—*Engineering*.

Telegraphic Communication with Germany.

THE *North-German Correspondent* announces that the negotiations for the establishment of a direct telegraphic communication between Germany and the United States have almost reached a successful termination. Count Reichenbach, who has been authorized by the North-German Confederation to undertake the enterprise, proposes to carry out the scheme by leasing one of the wires of the Atlantic cable for the exclusive use of Germany.

The Ceylon and Penang Telegraph Cable.

THE following notice has been issued regarding a company introduced in August last, for the construction of a light telegraph line from Ceylon to Penang, but which it was supposed had not succeeded in raising the required capital:

"The India, Australia and China Submarine Telegraph Company (Limited) have secured their capital, and the action between Ceylon and Penang will be commenced immediately by the India-rubber, Gutta-percha, and Telegraph Works Company, at Silvertown, and it is fully expected that, by sending it through the Suez Canal, it will be in working order in April next.

The Great Eastern.—The Telegraph Cable to India.

THE *London News* of the 23d of October says: "The Great Eastern, with upwards of 2,000 miles of the new India cable on board, will take her departure from the Medway to-day, about noon, just before the top of the tide. According to the latest arrangements, she will proceed under easy steam to the Portland roads, whence, after receiving on board the remainder of her stock of coals, she will steam direct to the Red Sea, via the Cape of Good Hope, to commence laying the cable which is to connect Suez with Bombay. The Great Eastern will be navigated from the Medway to Weymouth by Navigating Lieutenant G. Brockman, of her Majesty's steamer *Wildfire*, who has had the sole charge of the vessel on the several occasions of her arriving at and leaving the Medway. She is expected to be absent from England for three or four months, and immediately on her return she will commence the shipment of the cable manufactured by the Telegraph Construction and Maintenance Company, to be submerged between Falmouth and Malta, where it will be connected with the existing cable from Malta to Alexandria, thus completing the connection between this country and India."

A London paper pronounces "incredible" the statement that a telegraphic message can be read by the sound of the instrument.

TELEGRAPHIC BREVITIES.

A TELEGRAPH wire was connected, on Wednesday last, with the great astronomical clock in the Cambridge observatory, and the beats of its pendulum distinctly recorded on a telegraphic instrument in Springfield, not quite instantaneously, but near enough so for all practical purposes—the actual loss of time being less than one tenth of a second. The proper allowance was made for the difference of location between Cambridge and Springfield.

A pneumatic tube has been laid in Chicago, for the transmission of despatches from the Board of Trade to the telegraph office.

The firm of Norton & Co. have applied to the Mexican Congress for the privilege of laying a telegraph cable between Mexico and Cuba.

The *Springfield Republican* states that the reduction of the rates of telegraphing increased the business of the Lee, Mass., office one third last month, and the total receipts were slightly increased.

The Western Union Company has recently opened an office on Liberty street, Pittsburg, for the accommodation of merchants doing business on that street. Mr. Bryant, of the main office in that city, has been appointed manager.

A New Railroad Line.

THE Lake Superior and Mississippi Railroad Company's telegraph line is completed, and commenced business on Monday last. The wires of this line connect at St. Paul with the wires of the Pacific and Atlantic Telegraph Company.

The Invention of the Electric Telegraph.

THE *Scientific Review* (British) says: "Mr. Fothergill Cooke, member of the Council of the Inventors' Institute, is to receive the honor of knighthood, as a recognition of his eminent services in the invention and practical realization of the Electric Telegraph."

Better late than never may be a very good adage, when it is a question of rendering justice, and bare justice only. For ourselves we should prefer, when a thing is to be done handsomely, to take "*bis dat qui cito dat*" as our motto. In the interests of scientific truth, and of common honesty, the *Scientific Review* has, on more than one occasion, asserted the claim of Mr. Fothergill Cooke to the largest meed of honor, in connection with the great invention which ought to bear his name. Our judgment was based on the fullest circumstantial and documentary evidence, and that it was a correct one is now put beyond question by a recognition, in the highest quarter, of the justice of those claims which it was our duty to support.

Presentations.

THE fellow employes of Mr. L. T. Chubbuck, Assistant Train Despatcher on the D. & M. Railroad, yesterday morning presented him, on the occasion of his leaving to take the position of conductor on the South Pacific Railroad, with a handsome 18 carat gold watch, chain and charm—the latter in the shape of a conductor's punch, about one inch long, and capable of practical duty. The presentation was made by Mr. Edward McNell, who remarked to Mr. C. that, as the journey was a long one, his associates had thought fit to tender him a box of segars with which to while away the hours, at the same time handing him a package wrapped in paper. Mr. Chubbuck, unaware of the contents, and fearing a sell, was diffident about opening the neat leather case which contained the presents, but on being pressed for a smoke, was most agreeably surprised to find such a valuable token of esteem. He expressed his gratitude, and assured the donors that their friendship should never fade from his remembrance. On the watch was inscribed: "Presented to L. T. Chubbuck by his fellow employes of the D. & M. R. R., September 30, 1869."—*Detroit Daily Post*.

Recent British Patents.

No. 2,525.—Octavius Varley and Frederick Henry Varley, 23 Stonecutter street, Farringdon street, London.

Improvements in instruments for transmitting and recording electric signals, part of the invention being applicable to other purposes. Six months' provisional protection.

No. 2,480.—Henri Adrien Bonneville, Portchester terrace, Bayswater.

Improvements in transmitting fac-simile copies of writings and drawings by means of electric currents. Dated 26th Sept., 1866. Stamp duty of £50 paid.

No. 2,643.—Thomas Walker, Robert street, Chelsea.

Improvements in electro-telegraphing. Provisional protection for six months.



SATURDAY, NOVEMBER 13, 1869.

J. N. ASHLEY.....Publisher and Editor.

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THE JOURNAL OF THE TELEGRAPH ON COMPETING LINES.

THE Western Union official organ, in its issue of November 1st, has a venomous leader, signed "P.," under the title of "*Mock Auctions and Swindling Telegraph Schemes.*" We should judge, from the *animus* exhibited in this article, that our Western Union friends had lately been somewhat hurt, and their monopoly seriously threatened by the movements and arrangements of their competitors.

According to our semi-official "P.," persons or associations who presume to interfere with the monopoly are on a par with "gift enterprise dealers, mock auctioneers, ticket swindlers, pocket-book stuffers, etc." Further along these impious and profane intruders upon the sacred precincts of the Western Union Company are styled *Chevaliers d'Industrie*, who have turned their attention from getting up bogus gold, silver, copper mining and oil companies to the telegraph field.

We are sorry for those who, by their rascally efforts to meet the demands of the public for telegraphic competition, have incurred the wrath of the Western Union managers and their organ. "P." is evidently after them with the sharpest kind of a sharp literary stick. Henceforth they will, doubtless, live in constant anticipation of the visits of the sheriff or policeman, and will have their bail bonds always in readiness to meet any emergency.

The logical influence, from "P.'s" violent and abusive diatribe, is that the Western Union Company has in some way acquired a sacred, prescriptive, and exclusive right to the telegraph business in this country; that any attempt to interfere or compete with that company renders the offending party a moral outcast, who should be shunned by all good men, and whose proper location would be in the nearest penitentiary or State prison, where he or they could render the community valuable service as stone cutters or shoemakers.

We have ourselves not been sparing in exposing fraud and chicanery, as embodied in certain pretended telegraph organizations. We wage war in the interests of the profession and the public against such swindles; but this general denunciation of all competing companies is simply absurd and ridiculous. The public demand and will have telegraphic competition. The alternative to this is the transfer of the management of the business to the Government. If it is to be a monopoly it must be a Government monopoly, for no other will be submitted to.

It is true that there is and has been a great deal of fraud in getting up telegraph companies, and in constructing telegraph lines.

The Western Union Company itself is an aggregation of lines and companies, many of which were "conceived in sin and brought forth in iniquity;" shall we therefore denounce its officers and managers as thieves and swindlers. Have any of the managers of existing competing companies been guilty of greater fraud than was shown in the conduct of certain honorable managers of the Western Union Company who are yet largely interested in it, and who withheld from the stockholders a knowledge of the true condition of its affairs, and bought up its stock at nominal prices from ignorant investors, knowing at the time that there was money enough in the treasury to pay a dividend of one hundred cents on the dollar.

If it is desired by the managers of the Western Union Company to go into this matter of fraud and swindling, the history of that company, and of the various companies by the consolidation of which it was formed, will prove very interesting and instructive. That history has not yet been written, but the material for it exists.

If it is not desired that this story shall be made public let them muzzle "P.," and devote the columns of their organ to the amiable generalities which have heretofore characterized it.

The Western Union Organ and the Strike.

OUR amiable friend, the Editor of the Western Union official organ, seems to be a little muddled in relation to the recent strike of the Franklin operators. Of course it would not do for him to approve the strike, for the question arises whether, having concluded to have a voice in the arrangement of the terms of service, the operators might not at some time extend the same process to the lines of the company which he represents. Therefore, he says, "strikes may be sometimes effective and just" (when applied to opposition companies, we presume), "but their influence is generally pernicious. It separates interests which should be one, and stimulates invention to make labor unnecessary, or revenge for interference." After considerable study, having failed to guess the conundrum presented in that last sentence, we have concluded to give it up.

The strike having been successful before the paper went to press, however, he has a good word for the operators, saying "the whole matter has been managed with marked firmness and moderation, yet we trust that no such resort may again be necessary." This recognition of the justice and moderation of the Franklin line operators, and *quasi* endorsement given them, we doubt not they will properly appreciate. The most remarkable part of our cotemporary's article is, however, in its concluding paragraphs:

"The peril to public business by strikes," he says, "would compel its assumption by the Government, and the enslavement of the craft would be complete. Resistance would be crime."

That is to say you are all right as long as you only embarrass competing lines, but if any such operation is attempted on us we will sell out to the Government, and then you will be compelled, by Act of Congress, to labor such hours and for such pay as that body may see fit to ordain. Perhaps so, but we don't exactly see it in that light.

"Resistance would be crime!" Pshaw! What crime would there be if operators declined to work for the Government except upon terms satisfactory to themselves? Government has no prescriptive right to the services of citizens, except in time of war, and this talk of resistance being crime is the merest balderdash.

If the Government ever does assume telegraphic management it must go into the market for skilled labor, like any other employer, and pay a reasonable price for it, and if any operator or any combination of operators does not see fit to accept situations upon the proffered terms, it is no more a crime than to do the same in the case of a Corporation. The intelligent telegraphers of this country cannot be humbugged by such nonsense.

The Philadelphia Telegraphers and the Strike.

In our detailed history of the recent successful strike of the Franklin line operators we inadvertently omitted to give the Philadelphia operators the credit due them.

We are informed that they were ready with a cash contribution of two hundred dollars, at half an hour's notice, to sustain the strikers, and would have followed this up with as much more as might have been required of them. The Philadelphia operators are never behind their brethren in any good work, and may be relied upon in any emergency to coöperate with and sustain their brethren in just and equitable demands or efforts to secure their rights.

The Pacific and Atlantic Telegraph Company.

THE Pacific and Atlantic Telegraph Company completed the fitting up of their office at No. 23 Wall street, in this city, and opened for business on Monday last. The office has been very neatly fitted up, and although somewhat restricted for room, is very conveniently arranged for the accommodation of customers and the transaction of business.

The wires of the P. and A. Company having been extended to Chicago, Ill., and an office opened in that city. The charge on Chicago messages was reduced from \$1 75 and 12 to \$1 50 and 10.

A new feature in tariffs, adopted by the P. and A. Company, is the transmission of business at night at 50 per cent. of the day charges. For messages for which instant delivery is not essential this arrangement will prove very advantageous. The Western Union and other companies have had a system of reduced charges on night messages in operation for some time, allowing more words to be sent for the same amount; but under the rule of the P. and A. Company a positive reduction of the price to be paid is made.

The Western Union and Atlantic and Pacific Companies have followed the example set by the P. and A. Company, and have reduced their tariffs accordingly.

The main office of the Pacific and Atlantic Company in Chicago has been established at No. 91 Clark street. This company has announced a general reduction of tolls to all points of from 10 to 25 per cent.

New Patents,

For the week ending Nov. 2, and each bearing that date.

No. 96,330.—APPARATUS FOR PERFORATING PAPER FOR TELEGRAPHING.—George Little, Rutherford Park, N. J.

I claim, 1. A wheel for feeding along a strip of paper to be perforated, in combination with an armature swinging on the same axis as the feed-wheel, and an electro-magnet, substantially as set forth.

2. The punch *i* and presser-plate *e*, in combination with the feed-wheel *b*, die *c*, and sleeve *f*, substantially as and for the purposes set forth.

3. The magnets *A* and *L*, arranged as specified, in combination with the lever *g*, on the fulcrum *7*, that is one pole of the magnet *A*, and with the circuit-changer *n*, substantially as and for the purposes set forth.

4. An apparatus for composing telegraphic communications, consisting of a magnet, lever, punch and die, to perforate or emboss the paper, in combination with a feed-wheel and an electro-magnet, to move said feed-wheel progressively, substantially as set forth.

5. Mechanism for feeding the paper by magnetism, and mechanism actuated by an electro-magnet, for perforating the paper, in combination with mechanism for closing the circuits to the respective magnets in such an alternate manner as to compose a telegraphic communication on a strip of paper, substantially as set forth.

6. The tablet *t*, formed of conductors, arranged substantially as set forth in combination with a moveable stylus or circuit-closer that is to be moved, in contact with the conductors of the tablet, to produce alternate pulsations of electricity for feeding the paper and punching the same by magnetism.

No. 96,331.—APPARATUS FOR PERFORATING PAPER FOR TELEGRAPHING.—George Little, Rutherford Park, N. J.

I claim, 1. The circuit-closer *p* in the groove of the cylinder *o*, in combination with the band *7*, key *m3*, and finger *v*, substantially as and for the purposes set forth.

2. The feeding-disk *c* on the shaft *b* of the cylinder *o*, in combination with the frictional connection *d*, and holding magnet *m2*, for moving the paper by the direct action of the cylinder *o*, and arresting the movement of the paper when the punch is acting, substantially as and for the purpose set forth.

3. The magnet *t*, in combination with the magnet *A*, lever *f*, punch *n*, and circuit-changer *m*, for perforating the paper, and then drawing back the punch by magnetism, substantially as set forth.

4. The circuit-changer *m*, in combination with the magnets *A* and *t*, and lever *f*, to direct the electric current, substantially as set forth.

No. 96,332.—ELECTRO-MAGNETIC MOTOR. George Little, Rutherford Park, N. J.

I claim, 1. An electro-magnetic motor, formed with armatures upon a spindle, in combination with stationary magnets and governor balls, applied in substantially the manner specified, to communicate an end movement to the spindle, and regulate the speed by the friction resulting from such end movement, substantially as set forth.

2. The cylinder *k*, collar *5*, sleeves *n* and *g*, and governor balls *p*, arranged and applied substantially as set forth, in combination with the spindle *d*, armatures *e*, and electro-magnets *b* *c*, substantially as set forth.

3. The adjustable stop *l* and spring *6*, in combination with the spindle *d*, carrying the armatures *e* and friction collar *5*, so that the spindle *d* and its parts are sustained or balanced by the said spring *6*, for the purposes and as set forth.

No. 96,333.—AUTOMATIC TELEGRAPH APPARATUS. George Little, Rutherford Park, N. J.

1 claim, 1. The adjustable brush *20*, in combination with the roller *b* and stylus, substantially as and for the purposes set forth.

2. The stylus, formed of a disk, with a platina or non-corrosive edge, in combination with the arm *n* and roller *b*, as and for the purposes set forth.

No. 96,465.—COMPOUND FOR PRIMING ELECTRIC FUSES. George M. Mowbray, Titusville, Pa.

I claim the manufacture or preparation of a compound, which I denominate "Mowbray's safety-priming for electric fuses," of the ingredients in the proportions substantially as described, and for the purposes set forth.

MARRIED.

FITCH—WATT.—On Wednesday, November 3, at the residence of the bride's aunt, Mrs. P. A. FAINE, by the Rev. JOSEPH GREEN, Mr. IRVING S. FITCH to Miss ALLIE M. WATT, all of this city.

KETTLES—PAULDING.—At Duxbury, Mass., Nov. 7th, 1869, by Rev. B. OTHMAN, WM. E. KETTLES, of the French Cable Company, to EMELINE E. PAULDING, daughter of Henry Paulding, of Duxbury.

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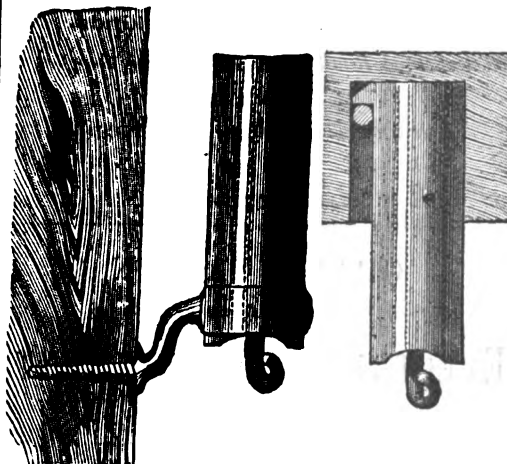
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which is much RICHER AND FINER than brass, he now presents his work in a style and of a quality that are unsurpassed. His relays were awarded the

FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the *helix*, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same. He is also manufacturing the

IMPROVED BUTTON REPEATER,

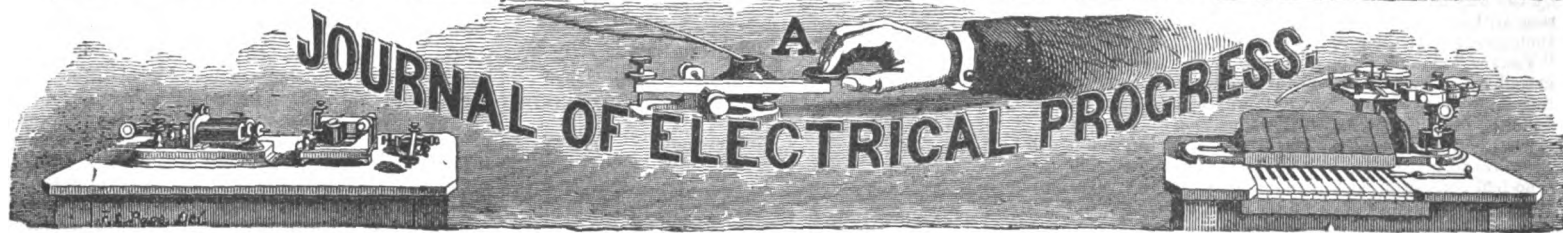
the cheapest, most reliable and simple repeater as yet invented

PRICES.

Button Repeaters.....	\$6 00
Relays, with helices in bone rubber cylinders (very fine).....	19 50
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Main Sounders, some as the above, with heavy armature levers without local connections, 75 cents less.	
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THE TELEGRAPHER.



Vol. VI.—No. 13.

New York, Saturday, November 20, 1869.

Whole No. 175.

THE TELEGRAPHIC EXHIBITION.

BY O. P. ERATOR.

PAT FLYNN, one day, came to a door,
And with keen eye and suppressed laugh
"The Western Union Telegraph"
Read blue and gilded letters o'er.

"The telegraph!" amazed, he cried,
"And what is that, I'd like to know?
So faith I'll make this fellow show
Me what it is he has inside."

He stepped in—walked across the floor
Up to the window, looked within
With twinkling eyes and broad'n'ing grin,
And scanned Sir Opus o'er and o'er—

Looked quizzingly on all he found—
On instruments, the ceiling too,
And where the wires were lost to view
There, and below, towards the ground:

Then seemed to think, perhaps, the task
He came to do, or else the way
To do it, or yet what he'd say
Seemed not so plain. "What should he ask?"

Perhaps the noise confused his head.
"The telegraph?" yes, he knew that—
That's not what I am getting at.
"But what's the telegraph?" he said.

Sir Opus, then, with comic sneer,
Ignored the "no admittance," and
Pushed back the railing with his hand,
And said to Pat, amused, "come here,

"I'll show you what it is, my friend.
These ticking boxes here, you see,
Are talking Greek, but not to me;
For I their meaning comprehend.

"You see those iron lines, that bend
Both in and out the window there?
Well, to and fro, straight through the air
They take and bring words people send."

The while he talked poor Pat stood by
Agape, and for some moments dazed,
And then, half angry, half amazed,
"Now how ye'd mock me with a lie!"

Said Flynn then, when at last he spoke,
"Ye'd fool me with your telegraph—
If not so angry I would laugh;
I know, or I should think, you joke."

Then with quick curiosity
He took his hat from off his head,
And stroked his hair the while he said,
And crooked it on defiantly—

Inquisitively—with a smile,
"If through that twine you talk at all
I'd think 't would squeeze yer words so small
They'd scarce be heard e'en half a mile."

Then asked, because he could not reach,
"What's that inside those pots of glass?
And what d'ye call that dirty brass?"

Said Opus. "That is pristine speech,
"Or liquid thought—impulse of words
That, prisoned in that crystal brain,
Goes forth and oft returns again,
Like tender, gay and fluttering birds."

Half musing and amused, half sport
Impelled him, as he'd quiz poor Pat,
And next, "that brass? Oh that, why that
Is molten feeling," he'd retort;

"It's hope, and joy, grief, anything
Depending wholly on its use,
Or, pending often its abuse,
Is cussedness upon a string."

Pat listened, half bereft of sense,
But not one word, save "cussedness,"
With meaning deigned his ear to bless,
That made his presence a past tense.

With innocent theatric air
He started, as he said it o'er,
Then started towards and through the door—
Insanity could only swear!

And thence a babbling lunatic
Sir Opus passed in thought of Pat.
"Who's that?" you ask him yet, and "that?"
"The telegraph!" he'll answer quick.

[Written for THE TELEGRAPHER.] ARMY TELEGRAPH REMINISCENCES.

BY AGITATOR.

NO. IV.

LIEUTENANT-GENERAL PEMBERTON's gallant army, who withstood the protracted siege at Vicksburg, Miss., with such fortitude, were, on July 4th, 1863, compelled by starvation to surrender their works and city. Such was the invulnerable character of the Confederate works that General Pemberton's ability to hold them was undoubted, so long as his commissary stores were sufficient.

For many weeks prior to the surrender, and during the progress of the siege, General Grant had complete telegraphic facilities from his own to the corps, division and brigade headquarters of his army. Solomon Palmer, superintendent of telegraph construction, had put up a single wire from the extreme left to the extreme right of the Union army, the former resting on the Mississippi River below, and the latter above the city, and thence to Haines' Bluff, eight miles on the Yazoo River.

This line was about twenty-five miles in length, and had from seven to ten instruments in circuit.

John C. Sullivan (familiarily known as Yankee) was at this time recognized as chief operator on this portion of the lines in Superintendent Fuller's department, and was also recognized as a man whose noble heart was "in the right place."

Sam Beckwith, who from this time until the close of the war travelled with General Grant, Ed Butler, Jack Ingle, Doc Johnson, Robinson, Baxter, Booth, Allen and Parsons, were operators.

Booth was stationed at Chickasaw Landing, on the Yazoo, at which place all the Federal supplies were landed. A large bayou extended inland from the river near the point, with its motionless, slimy, green waters, making it a very unhealthy location. Poor Booth, constitutionally weak, early fell a victim to Southern fever, engendered by the unwholesome miasma from this bayou. He was a kind, uncomplaining young man, a genial companion, and his death was mourned by those who were so fortunate as to have his acquaintance.

The writer of this, while temporarily filling the vacancy occasioned by the sickness of Mr. Booth, early one morning discovered the dead body of a negro boy not a hundred yards from the telegraph office tent, on the bank of the bayou. The proper authorities were promptly informed, but, to their disgrace be it said, the body was allowed to remain in the same position as when found for three days. Men were dying every hour from diarrhoea and fever, and owing to unnecessary haste in their burial, the unwholesome air of this locality was the immediate cause of much sickness and many deaths.

For several days nothing of an unusual character had been telegraphed. Occasionally would be heard an earth-shaking explosion, caused by a mine being sprung under some portion of the enemy's works, or the enthusiastic or disconcerted yell of the troops in front, as some successful or defeated movement was made. The heavy booming of siege guns day and night indicated that the ball was still rolling. At times there would come one grand opening of artillery music, which would roll and re-echo among the majestic hills for five minutes; then almost a dead silence would follow, and one would almost imagine that he had only heard the artillery of heaven, which, being passed, had left an unclouded sky and peaceful quiet.

About noon on the 3d of July every operator's ears were quickened by a nervous, hasty call from General Grant's headquarters, 22-22-22 (signals for precedence and importance). Beck's manipulation, ordinarily slow, firm and distinct, was now quick, shaky and nervous. "Big news!! Pemberton in with flag truce!! Wants to know terms, if he will surrender!! Grant now conversing with him!! Give you more soon," etc.

Every operator's heart beat in unison with every dot and dash of the above sentences, as they were flashed over the wire. It was indeed big news. Nothing more was heard from Beck for a half hour, but the wire was not idle. During that half hour, which was a very long one, terms of capitulation had all been agreed upon among the operators. No more laying on the bare ground under tents. Visions of clean sheets, and sound roofs over their heads, flitted before their mind's eye, being an uncommonly pleasing vision to some of them, who had not known these luxuries for months. Rumors had been flying around the camp for several days that the Confederates were eating mules, and this flag of truce suggested the idea that such was the case, and that General Pemberton was forced to surrender. After a great many surmises had been indulged in over the wire, Beck broke in with this intelligence: "Pemberton asks for an armistice, in order that the terms may be agreed upon for the surrender of the city." An order was soon after telegraphed to all commanders to cease firing on the whole line, which was promptly obeyed.

General Grant's terms were soon made known, and it was agreed that, should white flags appear on the enemy's parapets at ten the following morning, it would signify compliance with the terms.

At 9 A. M., July 4th, the little white signals of peace were seen in large numbers rustling in the breeze. All was over. The tide of blood was suddenly stopped by a few words of mutual understanding. Why could not these words have been spoken on each side of Mason and Dixon's line before that tide was made to flow.

Those hardy soldiers, who had in fact been obliged to eat their starved mules, had lost their works and city, for which they had battled long.

The rattle of artillery all over the North, in commemoration of American independence, on that 4th of July morning, was answered from the brazen mouths of two hundred guns at Vicksburg, which now, for the first time in weeks, belched forth blank cartridges instead of their accustomed missiles of death.

On the 5th the telegraph offices in the field were closed, and the operators, bidding a joyful farewell to the six feet of mother earth whereon they had lain, marched into the city.

The first place visited by a telegraph operator in going into a strange town is the telegraph office. He seldom inquires the way, but finding the wires, follows them up. It certainly must be an intuitive faculty with operators which enables them to determine which wires lead out of town, and which to the office, simply by examining the wires as they run in the streets.

The telegraph office, or the building which had been used as such, was the first point of attraction to our boys. It was found in the upper room of a two-story brick, the ground floor having once been occupied as a bank. Nearly one half of the rear wall of this building had been demolished by a solid shot from a Federal gunboat, and a large shell had penetrated the roof, passing through to the cellar, imbedding itself in the ground without exploding. Subsequently this shell was unearthed by our telegraphers and after much labor conveyed to the office above.

Two heavy iron doors of the bank vault were firmly locked. We were not aware that telegraph operators, as a general rule, were fitted for burglarious enterprises, but the rapid manner in which they went through those two strong iron doors convinced us. With the exception of a case of dueling pistols, a glass vase ornamental clock, and a few other articles, nothing of value was discovered.

On July 7th Palmer brought the wires into this bank building, and communication was re-established with Haines' Bluff via the field line and Big Black River bridge, on the Jackson Railroad, where the Fifteenth army corps had gone after Joe Johnston.

The city being bare of subsistence stores, and those of

the Federal army coming in slowly, the operators were for several days at their wits' end to procure enough to eat. Meals could be had on the transports lying at the wharfs, but having only a small amount of cash (which by the way is nothing unusual for operators), they were soon without the means of procuring their meals. When their needs were the greatest a friend indeed came from "Yankee," in the shape of a five dollar bill—the last greenback in his possession—and which was barely sufficient to keep the wolf away until a telegraph mess could be established. About this time Doc Johnson, who always had a quick eye for business, took possession of a beautiful cottage on the hill, turning out a colored family, who had possession, and established a colored cook in charge. Doc acted as chief caterer, and soon had a splendid mess established. Doc's peculiar talents as a successful caterer were duly acknowledged. If anything in the shape of fish, vegetables, or other desirable articles, were to be had, they always appeared on his table. As soon as the telegraph paymaster made his appearance a small sum from each operator was placed in Doc's hands, confident that its equivalent would appear on their table. Now that Doc is manager of a wife, and Western Union Telegraph office, we suggest that he resign the latter and engage to manage a hotel, as we feel confident that success would attend him in this line of business.

We occasionally hear from some of those old companions-in-arms with whom we were associated during those exciting times. Some are married, have children, and are settled down into permanent positions. Others, unable to shake off the habit of roaming, are going about from place to place, with no object in view except satisfying their desires for excitement and change. Wherever they are, or in whatever engaged, they will ever be remembered by one of their number.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Good News from Pittsburgh. The Influence of The Telegrapher.

PITTSBURG, PA., Nov. 10th.

TO THE EDITOR OF THE TELEGRAPHER.

"WHAT has become of the Pittsburgh Operators?" has been so frequently asked through your columns, and with such manifest interest in our welfare, that a request so kindly and fraternally made can no longer be denied.

All are doubtless aware of the fact that, since the publication of the "Pittsburg Letters," a short time ago, a change of Superintendents in this District has occurred. This was significant, and gave us some promise for the future, as rotation in office has in all ages been deemed beneficial to those concerned.

The letters referred to, ventilating the Western Union Office in this city, were a true and candid narration of affairs at that time, and although the writers remain unknown, they have the satisfaction of knowing that they accomplished some good, sufficient at least to incur the blessings of their fellows.

We have seen with regret the sensational communication in THE TELEGRAPHER, purporting to emanate from the operators in this office. The statement that "eleven hours are endurable" is simply preposterous—no such hours existing. Such a reckless disregard for the truth does our Superintendent great injustice, and is alone calculated to work us injury.

Mr. C. O. Rowe, our Superintendent, although in his present capacity but a few weeks, has given every indication of a just and equitable management. Coming from the ranks of his fellow operators, he appreciates the importance of his position, and makes it his pleasant duty to consult, as far as possible, our necessities and comforts. We note with pleasure a few of the improvements brought about under his administration. Salaries have been increased to the regular standard adopted in other cities; hours for labor have been reduced, giving us both a day and night force; a regular all-night man is employed; the operating room, once so redolent with filth and slime, has been thoroughly cleansed, papered and white-washed—the wood-work beautifully painted; a water-cooler and wash-sink, with clean towels and soap, are also late innovations; pens and ink are more bountifully supplied, and lastly we can chronicle the introduction of six new chairs.

Comparing the present with the past, have we not occasion to rejoice?

To those of our friends who desired to hear from us we extend our thanks for their interest in our condition. We are perfectly content to labor on in this portion of the Western Union vineyard; and, as a further proof of

our unalloyed happiness, desire all to read the effusion of our office bard, imprinted, in a moment of rapture, upon the blank leaf of the night record book:

"Night record of the boys that ever do right,
Always on time, and never get tight,
Who work late and early, dry nights and wet,
And haven't their equals come across yet."

WHERE YOU GOING NOW?

Treatment of Pittsburg Operators.—A Great Improvement.

PITTSBURG, PA., Nov. 9th.

TO THE EDITOR OF THE TELEGRAPHER.

THE letter which appeared in THE TELEGRAPHER some time since, purporting to be from Pittsburg, grossly misrepresented the present treatment of operators in the Western Union office in this city. I will give you our time schedule, and you and your readers can judge of the correctness of the statements referred to:

The day force in this office is on duty from half past seven A. M. to five o'clock P. M., if they bring their dinner to the office, but most of them get night operators to relieve them an hour for dinner, and work till six P. M. in return. The night force averages about seven hours' work each, with the exception of the operator on duty all night, and no unnecessary fuss is made, even if an operator should be necessarily delayed a few moments beyond his regular time for commencing work occasionally.

Mr. C. O. Rowe is well liked by all the employees of this office, and we certainly could not have a more kind and considerate, and, at the same time, a more efficient superintendent. This is a true statement of affairs here, and perhaps with the exception that salaries are a little below the standard in some other offices of similar size and importance, we have no cause for complaint. P.

Philadelphia Telegraph News.

PHILADELPHIA, Nov. 8.

TO THE EDITOR OF THE TELEGRAPHER.

IN THE TELEGRAPHER of the 30th of October I noticed a communication from this, our city of "Brotherly Love," noticing items of interest occurring here. It is gratifying to see that the "Quaker City" is not dead but only sleeps, and that we have some one in our midst who can at least write a short article for our paper occasionally. Although Philadelphia is next to New York as an important telegraphic centre, yet we seldom, if ever, hear anything in regard to her. Surely there is enough of interest transpiring in this little village, as New Yorkers term it, to elicit an article from the pen of some of our talented operators, of whom we have a goodly number.

Among the most interesting items of news here is the removal of the Pacific and Atlantic Telegraph Company to their new and commodious quarters, 303 Chestnut street, opposite the Philadelphia Inquirer. The passer by cannot fail to notice the office, there being a large window forming the front of the office, lettered in the best style, and said to have cost from \$500 to \$5,000, more or less; also a ponderous mass of wood, several feet high, upon which a large number of wires are strung, running from thence to the office.

Upon entering the office the observer will at once notice the counter, which separates the operating and receiving departments from the public. It is fashioned and built after the style of counters used by the "Fidelity Trust and Safe Deposit Company," of this city, the elegance and simplicity of which are well known to the Philadelphia public. The company are possessed of ample facilities for the transmission of their business to all points in the United States and Canada; and the public, in patronizing the P. & A. line, can rely upon the prompt and faithful delivery of all messages entrusted to their care. Among the principal offices recently opened on this company's lines are New York, Philadelphia, Chicago, St. Paul's, Minn., and St. Louis, Mo. Lines are being rapidly extended South and West, and ere long we are in hopes of seeing this new but well regulated company successfully compete with its more powerful neighbor, the Western Union. Under its present management we have no fears for its future career.

The general office of the company at this point is in charge of Mr. S. B. Rumsey, whose efficiency as a manager is fully recognized by the company in still retaining him as their "Chef de Telegraphie." Mr. Jas. M. Gailer, late cashier of the Franklin Company, of this city, has charge of the receiving department, as well as the handling of all the lucre. His politeness and efficiency in this position, and his long connection with the business, peculiarly fits him for the somewhat arduous and trying position of financial adviser to the "Count." We wish him much joy and good fortune in his new capacity.

The operating department is headed by Mr. James Shain, assisted by Messrs. Love, Nelson and Johnson, who are all efficient artists, either in handling the quill or the manipulation of the key; indeed, it is said one of them frequently knocks "cross-arms" off in consequence of his rapid sending. He is young yet.

The delivery department is in charge of Mr. Colby Rumsey, brother of the manager. Colby is young at the business, but will no doubt succeed admirably in a number of years hence—time unlimited. He is mentioned as being a strict disciplinarian, and is well versed in the management of that peculiar class of beings known as telegraph messengers. Indeed we think the P. & A. Company have again shown their wisdom in the selection of the above named gentleman as delivery clerk.

Altogether, the new office and its surroundings are a credit to the genius of Mr. A. G. Casselberry, the assistant general superintendent of the company, and his assistants.

In closing these remarks we should like to see the P. and A. line sustained, not only by the public but also by THE TELEGRAPHER. An occasional word of encouragement never comes amiss. Keep the ball moving, boys.

HIP SKIP.

"Foul Air."

TO THE EDITOR OF THE TELEGRAPHER.

THERE is a barbarous custom prevailing in India, through a sense of religious devotion—the well-known Juggernaut—by which men sacrifice themselves and die a speedy death; and there are slower processes of sacrifice of human lives prevailing amongst what are termed the civilized portions of the earth.

There are many modes of death, and many kinds of motive to prompt thereto, but the purpose of this item is specially directed to the point of showing the very small advantage our much lauded enlightenment has over that of the barbarians in the matter of the valuation of human life. The illustration is more interesting to the fraternity for the reason that its truthfulness can be personally verified by all operators. I refer to the slow slaughter going on in nearly all telegraph offices, more especially during the winter season, but to a great extent during all seasons, owing to the insufficient means of ventilation visible—or rather invisible—in all the operating rooms, oftentimes in striking contrast to the executive departments. The most dangerous places in which operators are incarcerated are the main offices of the Western Union line in Philadelphia and New York, but more especially in the long, low, and wretchedly ventilated room at 145 Broadway, in which space are cooped up probably seventy-five persons, from whose bodies is emitted a large quantity of poisonous matter, which, with the vile gases from the cheap heating apparatus, make the atmosphere sometimes positively stifling—the relief being that of throwing down windows directly on one's shoulders—an almost equally dangerous remedy. Could not such an immensely wealthy corporation, with its greatly increased income, devote a small part of it to increased accommodation for its largely increasing force, and not foolishly persist in keeping such a large additional force in such small and ill-adapted quarters. That this subject needs immediate attention, and that it is for the interest of the companies as well, is illustrated in the increased mortality amongst their best men. If such attention is not given, those corporations proving negligent in this most vital matter might be fully compared to the barbarous King of Dahomey or the Japanese Tycoon, with the difference against them that ignorance sanctions the human sacrifice on one side, while something like avarice prompts it on the other side; and we victims, conscious of our involuntary doom, may often compare our quarters with the mills of the gods, which were said to

"Grind slow, but exceedingly fine." JUSTUS.

Condition of Washington Operators.

WASHINGTON, D. C., Oct. 26th.

TO THE EDITOR OF THE TELEGRAPHER.

OUR hearts have been made to rejoice by the announcement that the Pittsburg operators still live, and that the columns of THE TELEGRAPHER have been the means of partially abating a nuisance which, from the description given heretofore, would have caused the most hale and hearty operator to go into a decline. May the good work progress. Unluckily for our Chicago brethren, they still seem to be governed by an iron rod, and their condition made worse instead of better. We are glad to know there is backbone in Chicago to fight it out on that line. We wish there was more in Washington. We feel ourselves deeply indebted to the Pittsburg operators for the able manner in which they have laid before the readers of THE TELEGRAPHER the wrongs of the Washington operators. "Evidently they have been there." Truly

spoken when they say, "Spring might employ his time at home." Evidently he will. We hope that we may not find the Pittsburg operators wanting in time of need. We look forward to the day when we can say, and say it boldly, that our day's work is done, and not go home of nights to dream of being pressed on duty, and our attention called to the fact that we forgot to register our arrival for duty. We hope that this small piece of business will be stopped, or we allowed the privilege of fair play. As the ball has been started we may as well have a put and give it another kick and keep it moving, by stating, in addition to what the Pittsburg operators have said, that the windows of the operating room have been stained to prevent the operators from losing time by looking out on the street. Ice has been stopped for several months; we have been obliged to subscribe fifty cents a piece towards keeping the office supplied with soap and towels, and many other small things, too numerous to mention. How about those orders the manager has, but which are not yet made public? Don't keep them locked up. Bring them out, we will not blame you. We know it goes against your grain to post them up. Spring says he is satisfied, now that he has heard from the Pittsburg and Chicago operators, and will turn his attention to local matters, whilst "we uns" will endeavor to ventilate any wrongs that may be perpetrated upon us by the great monopoly. We hope that warning will be taken by the wise and truthful words spoken by the Pittsburg operators, and that those who anticipate coming to Washington to work during Congress, will not be disappointed, upon the adjournment of Congress, by the receipt of the unwelcome notification that, on account of reduction of force, their services are no longer required. It is useless for us to attempt to make any further remarks about the condition of operators in Washington, after the able manner in which the Pittsburg operators have spoken of their condition. It might be worse than it is at present, but we would like to see a reform in some of the rules now enforced here—one in particular, viz., the register system—at any rate those who issued the order might give an explanation of its object to the MAGNETS.

TO CORRESPONDENTS.

A SUBSCRIBER.—The phenomenon you describe is caused by the crystallization of the sulphate of copper, and occurs in all sulphate of copper batteries.

BALTIMORE STRIKER.—Your communication shall appear next week.

PERSONALS.

Mr. FRANK GILMORE, recently on duty in the oil regions, has returned to the Pittsburg, Pa., Western Union office.

Mr. FRANK GLIDDEN has been transferred from the International Company's Boston office to Portland, Me.

Mr. D. C. STANFORD, of 11 Broad street, is on a short visit to his home in Boston.

Miss BELLE MUDGETT is in charge of the Northern Company's Concord, N. H., office.

Mr. A. MCKEE has resigned his position in the Montreal Telegraph Company, at Brockville, Ontario, and accepted a position as day operator in People's Telegraph office, at Quebec.

Mr. MUNSON, of Johnstown, Pa., has taken a situation in the Pittsburg, Pa., Western Union office.

Mr. HUGHES, formerly of Titusville, Pa., works in the Duquesne Branch Western Union office, at Pittsburg, Pa.

Mr. FRED. K. GILLETTE has been transferred from Fort Churchill, Nevada, to the Wadsworth, Nevada, office of the Central Pacific R. R. Telegraph.

The Rochester *Chronicle* contains the following personal item:

"**ED. H. THRESHER**, of the Western Union telegraph corps in this city, has changed his base for the present, and will until further notice be located at the Saratoga office. Ed. has hosts of friends in this city, who will rejoice to hear of his success wherever he may go. We take this occasion to acknowledge our indebtedness for many courtesies, for which we make our grandest salutation."

The Charlestown, Mass., Fire-Alarm.

The fire-alarm telegraph, built by Gamewell & Co., for the city of Charlestown, Mass., is completed and in working order, and was satisfactorily tested on Monday last by striking all the bells. A committee from the city government of Lynn, Mass., visited Charlestown Tuesday forenoon, for the purpose of examining the working of the fire-alarm, with the view of having the same system introduced by Gamewell & Co. in Lynn.

THE TELEGRAPH.

The German-American Telegraph.

A Berlin, correspondent, writing on Oct. 26, says: "During the last week the negotiations for obtaining the needful capital for the projected submarine telegraph from Germany to England, to form a junction with one of the submarine cables to America, have been carried on with increased energy, but without the anticipated favorable result. The Director General of the North German telegraphs appeared decidedly to favor the undertaking, and has given the assurance of facilities and support in case the project should be realized; nevertheless the whole enterprise appears to have come to grief and been stifled in its birth. On one side, it must be confessed that the present period was injudiciously chosen for negotiating with the capitalists of this city, when it is well known that one of the two submarine cables between Ireland and Newfoundland is at present out of order, and unable to convey messages; and on the other side, it is understood that the English company will only consent to grant a lease of one of its wires to the projected new company provided the latter agree to bind their fate to that of the former for five-and-twenty years (that being the period for which the German concession is granted), thus renouncing all chances of unforeseen benefits from new improvements or fresh discoveries in telegraphy, or others arising from a reduction of charges or any other contingencies. And finally, it was considered that the proposed plan of a junction with an existing line of cable, though foreseen and provided for by the terms of the concession, did not come up to the generally received idea of a German-American direct telegraph, and that their dependence on a company subject to competition with existing and possibly future submarine cables, did not offer a sufficient guarantee for its becoming a paying concern. Even the momentary unfavorable value of the shares of the Franco-American Telegraph Company presents but slight inducement for the formation of a third competing line, with a similar object in view. I have only to add that, even though an American special agent has arrived here within the last few days, to support the interest of the American company indirectly engaged in the success of the projected enterprise, the required capital is not forthcoming; the whole concern hangs fire, and seems destined for postponement to a more favorable season. It may perhaps be in connection with this unexpected turn of affairs that the Director General of the North German Telegraph Department has just issued an advertisement, pointing out the facilities afforded by the French Company in forwarding telegrams from Brest direct to New York, the charge for a single message from Berlin to New York being eleven dollars and ten groschens, and thus calling the attention of the telegraphing public to the existence of this new route."

The India Telegraph.

The report of the Falmouth, Gibraltar and Malta Telegraph Company, presented on the second of November, states that the manufacture of their cable has commenced, and also that the cable for the British Indian Company is rapidly approaching completion. The Great Eastern steamship left Sheerness for Bombay on the 23d ult., with upwards of 2,200 miles of cable on board, and the remainder will follow very shortly in two other steamships. The laying is expected to be finished in March next. The Falmouth cable is expected to be finished in a few weeks afterwards, so that the whole line of submarine communication between England and India will be completed sooner than had been originally announced.

The British Post-office and Telegraphs.

For the present it is understood that the principal instrument rooms and galleries of the new Post-office Telegraph Department will be situated in the extensive buildings of the Electric and International Telegraph Company, in Moorgate street, London, where extensive alterations and improvements are in course of being carried out under the direction of her Majesty's Board of Works.

Aluminium for Telegraph Cables and Wires.

A CORRESPONDENT of the *Mechanics' Magazine* (of London) calls attention to the superior conductivity of aluminium wire over copper, and its efficiency for telegraphs. "It does not," he says, "I believe, solder; but the joinings of the copper wire do not appear to be made by solder but by splicing, closely sealed. As to the endurance of aluminium under electric action I cannot speak, and I do not think it has ever been tested; but it, of course, can be easily subjected to continuous powerful currents, so as to test its durability and point of fusion, and the effect produced on coatings by gutta-percha."

TELEGRAPHIC BREVITIES.

The number of telegraph offices in France has been greatly increased, and there are now 2,701, of which 1,701 are Government, and the remainder railway offices. Messages are forwarded from the railway offices, according to an arrangement with the Government.

At present the telegraph lines in France extend over 25,000 miles, and three and a half millions of messages are transmitted annually.

The estimate of the sum required for the year ending March 31st, 1870, to defray the expenses and salaries of the Government telegraph service in England (three months) is £90,000. This amount is required exclusive of the interest on the purchase money. The revenue for the same period is estimated at £168,000.

The telegraph line between Plymouth and Tremont, Mass., has been taken down, and Plymouth is now the terminus of the line from Boston.

The Secretary of the Navy will grant the application for a ship to make soundings between Havana and Rio Janeiro, preliminary to the laying of a telegraph cable between those places.

New Train Signal.

PASSING the Campbell House the other day, we saw a queer looking box stuck on a post at the corner of the house. We stopped to gaze at it, wondering what it could be. T. O. CORD, our telegraphic operator, saw us, and beckoned us over to the office to explain the "darned thing." It was a new railroad train signal, just invented by Mr. CORD, and KIMBALL, his assistant. A patent for the invention has been applied for. It combines a flag and lantern, and can be used for day or night, by the same operation. Engineers pronounce it just the thing—the most perfect signal yet invented. It operates with a cord and pulley, and the telegraph operator can signal a train without leaving his seat in the office. At night it can be seen two to five miles off. Mr. CORD proposes to give the T. P. & W. Railroad the right to use the signals for introducing it. We haven't a doubt that it will eventually supersede all other signals for similar use; and, if so, Mr. CORD has a nice little fortune, for every station on every road must have one.—*El Paso* (Ill.) *Journal*.

New Patents.

For the week ending Nov. 9, and each bearing that date.

No. 96,554.—ELECTRO-MAGNET. William Edward Davis, Jersey City, N. J.

I claim an electro-magnet which has the wire wound in alternate layers upon the spools or cores, so that it will pass back and forth between them, substantially as and for the purposes herein shown and described.

No. 96,567.—PRINTING TELEGRAPH APPARATUS. Thomas A. Edison, New York, N. Y., assignor to Samuel S. Laws, same place.

I claim, 1. The stationary pins *e f g h*, in combination with the clicks *b c*, actuated by the armature levers *E F*, and acting on the ratchet *D*, substantially as and for the purpose described.

2. The combination of a separate electro-magnet with the union lever *L*, substantially as set forth.

No. 96,641.—CABLE AND TESTING POST FOR SUBTERRANEAN TELEGRAPHS. Sylvanus Frederick Van Choate, Boston, Mass.

I claim, 1. A conducting cable for telegraphic purposes, in which a layer of clean, dry, fibrous material is interposed between the conducting wire and the insulating coating, in the manner and for the purposes set forth.

2. The construction of the testing boxes for telegraph purposes, whereby access of moisture is prevented, substantially as hereinbefore described.

3. In the construction of testing boxes of telegraph wires, affixing suitable characters for designating individual wires as well as the boxes themselves, substantially as before described.

4. The combination, with telegraph conductors, of ground wires, located at the test boxes of the same, substantially as and for the purposes specified.

5. The combination, with subterranean telegraphic conductors and test boxes, of ground wires, substantially as and for the purposes specified.

No. 96,681.—AUTOMATIC ELECTRICAL SWITCH FOR TELEGRAPH APPARATUS. Thomas A. Edison, New York, N. Y.

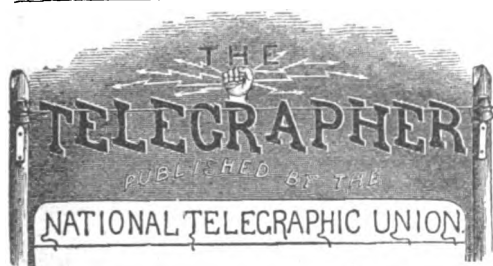
I claim, 1. An electro-mechanical switch, constructed substantially as described, in combination with two or more electro-magnets, placed in two or more distinct branches, 15 and 16, of the circuit containing said switch, all connected and operated substantially as described.

2. The springs *d d'*, in combination with the vibrating armature, and the points *c c'* for maintaining the continuity of the same circuit, substantially as set forth.

For the week ending Nov. 16th, and bearing that date.

No. 96,392.—TELEGRAPH SOUNDER.—Henry Splittorf, New York, N. Y.

I claim the sounding box *D*, elevated on posts *F*, and having the anvil *G* secured directly on its top; and openings in its sides, to increase the sound and allow the passage of the tightening spring, substantially as and for the purpose described.



SATURDAY, NOVEMBER 20, 1869.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.

Vice-President. W. O. LEWIS....New York.

Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.

Recording Sec...W. W. BURHANS...Box 6010, P. O., New York.

Corres. Sec.....F. L. POPE.....Box 6010 P. O., N. Y.

THE TREATMENT OF TELEGRAPHERS.

As the organ of the telegraphic profession in the United States and the British American Provinces, the columns of THE TELEGRAPHER legitimately ventilate their complaints and grievances. We have always considered that any telegrapher had a right to be heard in this paper, and to make known his real or fancied grievances, and seek, through such publicity, their correction and reformation. In times past its columns have borne convincing evidence of our impartiality in this matter, as we intend they shall continue to do in the future.

In the publication of such communications we have shown no favor to any telegrapher or to any telegraph company. Every communication making complaint, if properly written, has found a place, and without regard to the company or officials criticised. We know that such communications have, in many cases, effected much good, and, attention being called to causes of just complaint, they have been redressed, when they would not have been through private representations.

When we have deemed the complaints of sufficient importance, and substantiated properly, we have added editorial support to the communications of our correspondents, if, in our opinion, such support appeared to be advisable or likely to result in good.

While we invite telegraphers everywhere, and on any line, to make this paper their organ, we would caution them to first assure themselves that their complaints are well grounded, and that correction of abuses cannot, probably, be attained by other means.

Do not make trivial and childish exceptions to rules and regulations which, if properly understood, and the motives which prompted them known, would be found proper and unexceptionable. Recollect that the companies have some rights, and among these are the right to make proper regulations for the transaction of their business and the government of their offices and employes. Even what may be regarded by subordinates as annoying treatment from those placed over them is not always sufficient excuse for ventilating their conduct in print.

Telegraphers have enough of real grievances and oppression to complain of to render unnecessary any complaints of the kind we have referred to. There always will be a certain antagonism between employers and employed, arising from their diverse and sometimes conflicting interests, to create sufficient friction to furnish good cause to call for amendment and correction. Oftentimes subordinate officials, in their zeal to stand well at headquarters, will be guilty of oppression unknown to those higher up in official authority. Some of them, and these more especially among those who have risen from the ranks, are of so great importance, in their own estimation, that they are constantly guilty of acts of tyranny which

require the lash of public exposure to correct. For the exposure and punishment of such mean and contemptible fellows THE TELEGRAPHER is always open.

The managers of telegraph companies are also apt to exact from operators and other employes services which are unreasonable, either in themselves or in view of the amount of compensation paid therefor. Not the least of the grievances which are just cause for complaint on the part of telegraph employes, is compelling them to work in unsuitable, ill-ventilated and underground offices, when the destruction of health, and ultimately the sacrifice of life, is inevitable. The extent to which this practice has been carried, and the results, are shown in the rapidly occurring deaths among the comparatively small number of telegraphers enrolled in the Telegrapher's Mutual Life Insurance Association. Two and three assessments on the members a month are not unusual, in consequence of the death of individual members from consumption, and other diseases engendered or aggravated through the causes we have briefly alluded to.

While, therefore, telegraphers have so much of real importance to complain of, it is useless, and worse than useless, for them to waste time and space on trifles. The celebrated motto of DAVY CROCKETT is peculiarly applicable in this matter—"Be sure you're right, then go ahead."

Telegraphers may always confidently rely upon the aid and influence of this paper in all cases where they have right and justice upon their side, regardless of the particular line or company affected. Their interests are our interests, and their cause our cause; and, however telegraph companies and telegraph managers may regard our plain speaking, we are confident that the best interests of all parties are really advanced by the course heretofore and still pursued, and to be continued, of THE TELEGRAPHER.

Obituary.

HON. AMOS KENDALL.

THE pioneers of the telegraph in this country are passing away. The men who inaugurated the business, and who participated in its early struggles and final success, are one by one passing from time to eternity, and the places which have known them shall hereafter be vacant, and the story of their telegraphic trials, disappointments and triumphs, become history.

At about nine o'clock of the morning of Friday, Nov. 12th, AMOS KENDALL, whose connection with the telegraph and Prof. MORSE will do more to perpetuate his memory than all his political services and reputation, terminated a long and useful career, and forevermore his virtues and his frailties are shrouded in the solemn shadows of the tomb.

Mr. KENDALL was born at Dunstable, Mass., on the 16th day of August, 1789, and was consequently in his eighty-first year at his death. A farmer's son, his opportunities for instruction in early life were limited, but at 18 years of age he entered Dartmouth College, and in 1811 graduated the first in his class. In 1814 he emigrated to Kentucky and engaged in teaching. He was subsequently the editor of the *Argus of Western America*, a republican journal, published at Frankfort, Ky.

In political life he was successful, and in 1835 was appointed by Gen. JACKSON Postmaster-General, and was the first holding that office who regularly participated in cabinet consultations. He was subsequently engaged with Mr. F. P. BLAIR in the editorial management of the *Washington Globe*, the central organ of the Democratic party. In 1845 President Polk offered him a foreign mission, but having become interested with Prof. MORSE in his telegraph patents, and the introduction of the telegraph system, he declined it to devote himself entirely to that business.

His first practical connection with the telegraph was after the completion of the experimental line from Washington to Baltimore. The success of that experiment having demonstrated its practicability, and foreshadowed its

future importance, it was seen that it would become an important commercial interest, requiring business talent and shrewdness to manage it. Mr. KENDALL's able administration of the Post-office Department had shown the possession of great executive ability, and as he had retired from public life a poor man, he had every incentive to devote to the new enterprise his great business talent and irrepressible industry.

He was made the attorney of Prof. MORSE and Messrs. VAILS and GALE, the proprietors of the patent, with full power to dispose of and manage the same.

The subsequent years of Mr. KENDALL's business life was devoted to the telegraph, and he lived to see Prof. MORSE placed in a condition of pecuniary independence, and became himself quite wealthy.

Mr. KENDALL was elected President of the Washington and New Orleans Telegraph Company in 1854, and his administration of the affairs of that company was highly successful. In his management of the telegraph he was noted for his regard for, and kindness to the employes, recognizing and rewarding merit and application unsolicited.

When the Washington and New Orleans line was consolidated into the American Company, Mr. KENDALL became a director of the latter corporation.

Mr. KENDALL vigorously opposed the consolidation of the American Company with the Western Union, believing that the interests of the former would be better advanced by its maintaining its independent existence; an opinion which is doubtless shared now by many who thought him unwise at the time. So convinced was Mr. KENDALL of the impolicy of the consolidation, that when he found it was to be accomplished he disposed of all his stock and closed out his telegraph interests, and was not subsequently in any way connected with the business.

Of late years he has lived in retirement at his beautiful place, Kendall Green, near Washington, D. C. He was very liberal in his benefactions, especially to the Baptist Church, of which he was, during the latter part of his life, a member.

Our limited space, and the crowded state of our columns, compel us to be brief, and we have, therefore, only alluded to the leading events in Mr. KENDALL's life. He lived far beyond the usual limits of human existence, and has at length gone, full of years and of honors; but while the history of the telegraph is read his name shall be remembered, and, linked with that of Prof. MORSE and his associates, shall go down to future ages as that of one of the founders of the telegraph system in America.

The Atlantic Cables.

FOR two or three weeks past items in regard to proposed consolidations of the Atlantic and French Cable Companies—failure of the old cables, etc.—have been circulating through the newspapers. We have taken the trouble to investigate some of these statements, and believe the following to be the truth in regard to them:

In the first place there has been no negotiation between the Atlantic Cable Company and the French Cable Company for consolidation, or for the purchase of the batteries, cable or franchises of the latter.

Secondly. The Atlantic Cable of 1866 has not been abandoned, nor is it intended to abandon it. The Cable was broken near Valentia and also near Heart's Content. The steamer which was sent to repair the break off Valentia was delayed for some time by bad weather, but finally raised and repaired the Cable on that end of the line. We are informed that there is no truth in the statements in regard to its being raised and breaking several times. The steamer will now proceed to repair the Cable off Heart's Content, when no doubt is entertained but that it will be found in good working order.

The 1865 Cable never worked better than it does at present, and the statements that it is working slowly and feebly are absolutely untrue. The business of the line is good—the number of messages having very largely and rapidly increased under the reduced tariff.

Tillotson & Co.'s,

Number 11 Dey Street, is a busy place. When the telegraph equipment and supply business is dull TILLOTSON & Co. make up for it by an increase of business in their other departments. TILLOTSON complains that the telegraph business is dull at present, but no one would suspect it from the appearance of his establishment. Both here and in the establishments of BLISS, TILLOTSON & Co., of Chicago, telegraph superintendents, managers and constructors will find everything that they require, except poles, and of an excellence too well known to require any further endorsement from us.

An Omission Corrected.

In the article last week, on the Construction of Telegraph Lines, the potential of the battery with which the insulation tests given were made, was inadvertently omitted. It was equivalent to 620 Daniells cells—equal to the one through which the constant was taken. From this, and the data given, the specific resistance in lines of each insulator in the table may be readily deduced.

Extension of the Atlantic and Pacific Lines.

THE Atlantic and Pacific Telegraph Company have commenced building an extension of the line from Dayton to Cincinnati, Ohio, and expect to open for business in the latter city before the New Year.

POPE, EDISON & CO.,
ELECTRICAL ENGINEERS,
AND
GENERAL TELEGRAPHIC AGENCY,
OFFICE:
EXCHANGE BUILDINGS,
Nos. 78 and 80 BROADWAY, Room 48.

A necessity has long been felt, by Managers and Projectors of Telegraph Lines, Inventors of Telegraph Machinery and Appliances, etc., for the establishment of a Bureau of Electrical and Telegraphic Engineering in this city. It is to supply this necessity that we offer facilities to those desiring such information and service.

A LEADING FEATURE

will be the application of Electricity to the Arts and Sciences.

INSTRUMENTS

for Special Telegraphic Service will be designed, and their operation guaranteed.

CAREFUL AND RELIABLE TESTS

of Instruments, Wires, Cables, Batteries, Magnets, etc., will be made, and detailed written reports furnished thereon.

CONTRACTS

for the Construction, Re-construction and Maintenance of either Private or Commercial Telegraph Lines will be entered into upon just and reasonable terms.

VARIOUS APPLICATIONS OF ELECTRICITY.

Special attention will be paid to the application of Electricity and Magnetism for Fire-Alarms, Thermo-Alarms, Burglar-Alarms, etc., etc.

TELEGRAPHIC PATENTS.

We possess unequalled facilities for preparing Claims, Drawings, and specifications for Patents, and for obtaining prompt and favorable consideration of applications for Patents in the United States and Foreign Countries.

EXPERIMENTAL APPARATUS.

Attention will be paid to the construction of Experimental Apparatus, and experiments will be conducted with scientific accuracy. Parties at a distance, desiring Experimental Apparatus constructed, can forward a rough sketch thereof, and the same will be properly worked up.

DRAWINGS, WOOD ENGRAVINGS, CATALOGUES, Etc., prepared in the best and most artistic manner.

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Telegraph Wire, Cables, Instruments, Insulators, Scientific and Electrical, and Electro-Medical Apparatus, Telegraph Supplies of all descriptions, Telegraphic and Scientific Books, etc., will be purchased for parties favoring us with their orders, and forwarded by the most prompt and economical conveyance, and as cheaply as the same could be purchased by our customers personally. Our facilities for this business are unexcelled.

Letters and orders by mail should be addressed to
Box 6010, P. O., NEW YORK.

AMERICAN FIRE ALARM
AND
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GAMEWELL & CO., Proprietors,
104 Centre Street, N. Y.

This system of Fire Alarm Telegraph, with a central office, or upon the

AUTOMATIC PLAN,

is now in operation in the following cities, to which reference is made for evidence of its great superiority and value, and UNIFORM reliability:

BOSTON,	PORTLAND,
CHICAGO,	ST. JOHN, N. B.,
PHILADELPHIA,	HARTFORD,
CINCINNATI,	TROY,
ST. LOUIS,	NEW HAVEN,
BUFFALO,	ROCHESTER,
BALTIMORE,	SPRINGFIELD,
MOBILE,	TOLEDO,
NEW ORLEANS,	ALBANY,
PITTSBURG,	COLUMBUS,
LOUISVILLE,	LAWRENCE,
ALLEGHENY,	MILWAUKEE,
MONTREAL,	SAN FRANCISCO,
QUEBEC,	CAMBRIDGE,
	WASHINGTON, D. C.

THE DISTINCTIVE FEATURES OF THE
AMERICAN

FIRE ALARM TELEGRAPH

are a Combination of Circuits, the Automatic Signal Boxes, Electro-Mechanical Bell and Gong Strikers.

THE AMERICAN FIRE ALARM AND POLICE TELEGRAPH is covered by some twenty patents. Very early after its introduction into Boston, GAMEWELL & Co. purchased the original patents of FARMER & CHANNING, and during the past fifteen years have spared no expense or pains to improve and perfect this system.

Any information desired in regard to the above system will be cheerfully and promptly furnished upon application at the office. A pamphlet, setting forth more fully its advantages and superiority, has been printed, and will be supplied to Municipal Authorities and others interested in Fire Alarm and Police Telegraphy, upon application as above.

CHESTER, PARTRICK & CO.,
TELEGRAPHIC
AND
ELECTRICAL ENGINEERS,
CONTRACTORS, etc.,

38 South Fourth Street Philadelphia,

Manufacturers of, and dealers in every variety of

TELEGRAPHIC, ELECTRIC, AND PHILOSOPHICAL APPARATUS, BATTERIES, WIRE, ACIDS, INSULATORS, MEDICAL INSTRUMENTS, AND OTHER SUPPLIES.

Also, Contractors for the construction, re-construction, and repair of

TELEGRAPH LINES, SIMPLE BURGLAR ALARMS, FOR PRIVATE RESIDENCES, AND BURGLAR ALARMS WITH "TELL-TALE CLOCK," AND OTHER APPARATUS FOR BANKS AND PUBLIC BUILDINGS.

Among other Telegraphic Supplies constantly kept on hand, they are prepared to furnish promptly the following novel articles:

KERITE (OR HORN COVERED) COPPER OR COMPOUND WIRE OR CABLES,
COVERED COMPOUND AIR LINE WIRE,
BLASTING APPARATUS, CARTRIDGES, BATTERIES, &c., &c.
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MEDICAL BATTERIES,
INDUCED AND DIRECT CURRENTS;
ELECTRO-PLATERS' BATTERIES AND MATERIALS,
ELECTRO GONGS, OF ANY DESIRED SIZE OR WEIGHT,
ALARM APPARATUS,
PATENT APPARATUS FOR THE MANUFACTURE OF NITRO-GLYCERINE, ELECTRICAL CLOCK WORK,
&c., &c., &c.

They guarantee to give satisfaction to all who favor them with orders, in the promptness of execution and in the quality of articles supplied.

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MODERN PRACTICE OF THE ELECTRIC TELEGRAPH.

BY
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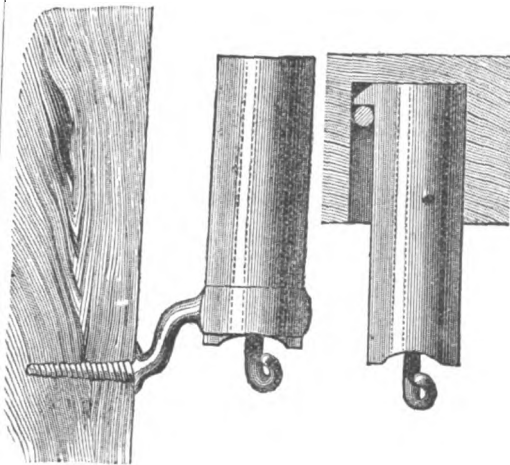
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THE TELEGRAPHER.

JOURNAL OF ELECTRICAL PROGRESS.

Vol. VI.—No. 14.

New York, Saturday, November 27, 1869.

Whole No. 176.

[From American Artisan.]

BRADLEY'S PATENT ELECTRIC CLOCK.

It is to be regretted that the high hopes entertained a quarter of a century ago concerning electric clocks have failed to be realized, notwithstanding the indefatigable labors of Shepherd, Bain, Airy, Wheatstone and others. The various modes heretofore employed for obtaining or transmitting the necessary motion may be resolved into two systems, with modifications, viz., that of Shepherd and that of Bain. In the first the vibrations of the pendulum were caused by the repeated impulses of either a small spring or weight; the attraction of an electro-magnet being employed to relieve the pendulum from the action of the spring or weight during the reflex vibrations. In the second the pendulum was caused to oscillate by means of permanent steel magnets, and a helix so arranged that intermittent currents acted to produce intermittent repulsions, or alternate attractions and repulsions.

Dr. Bradley, the inventor of the clock we here illustrate, has adopted an entirely new system of propulsion for the primary clock of a series, as well as an entirely new system of producing an isochronous movement of a number of secondary clocks at distances from the primary one. He does not, however, propose to employ electricity for the motive power of a single clock, as he considers, very reasonably, that the winding up of a weight once a week is preferable to the care and expense of a battery; but as a battery is requisite for the secondaries, the additional trouble and expense of running the primary clock by the same means is so little that he considers it better to use it.

The illustration represents a primary clock and one secondary, the latter—represented at the right hand—being supposed to be in some distant place. The primary clock, with its own and the secondary battery, are all represented in the same glass case, to facilitate the explanation. The battery may, however, be arranged in any other convenient place.

The primary clock is actuated by a small electro-magnetic engine, A, of which has upon it an endless screw, engaging in a worm-wheel on the spindle, b, of the second hand, c, and a pinion on the latter spindle actuates the ordinary face-wheels giving motion to the minute and hour hands. The most important feature of the invention, however, is the mode of applying the conical pendulum, B, and the means by which such pendulum is made automatically to compensate for variations in the electric force. This pendulum is also provided with an ordinary mercurial compensation for variations of temperature, and, therefore, cannot fail to keep very correct time. Before describing this latter compensation we will explain that the cup C is the battery of the primary clock, and that D is the battery for the secondary clock. The circuit wires of the primary battery are indicated by the letters c c, and those of the secondary one by letters d d. One pole of the primary battery, C, is connected with the helices of the electro-magnets of the engine, A, and the other is in connection with the pendulum rod, the lower end of which is terminated by a piece

of platinum wire, which enters a slot in an arm, f, made of some insulating substance, attached to the upper end of the upright rotating shaft, a, of the engine. On either side of the slot in this arm is secured a light platinum wire spring, having metallic connections for carrying the current of the engine battery, C; and the platinum wire of the pendulum rod playing in the slot of the arm f coming in contact with these springs, closes the electric current upon the engine, causing the movement of the pri-

The secondary clock is a mere dial, with hour and minute hands, and with a ratchet-wheel on the minute hand, operated by a pawl, which is actuated by the armature lever of an electro-magnet, with the coils of which the secondary circuit wires, d d, are connected. The second hand spindle, b, of the primary clock, forms a part of this circuit, and so does one of a series of little insulated cups, i, containing a globule of quicksilver. The circuit remains open, except for an instant, during the

rotation of the spindle b, when it is closed by the point of one of a series of needle-like arms, g, on the said spindle dipping into the globule of quicksilver in one of the little cups, i. This closing of the circuit once in every minute causes the armature of the magnet of the secondary clock to be attracted, and so causes the pawl to act upon the ratchet-wheel to move the minute hand. Any number of secondary clocks in the circuit d can be worked in the same way by the one battery, D, and all be made to keep time with the primary clock—and, in fact, so can several series or trains of such clocks. It is for the latter purpose that several quicksilver cups, i, and circuit-closing arms, g, are used, one for each series or train of clocks. Each of the cups, i, is connected with a separate branch circuit for one series of clocks; and the arms, g, are so arranged as to close these branch circuits one after another in succession, so that the labor of operating more than one series is never thrown upon the battery, D, at the same time.

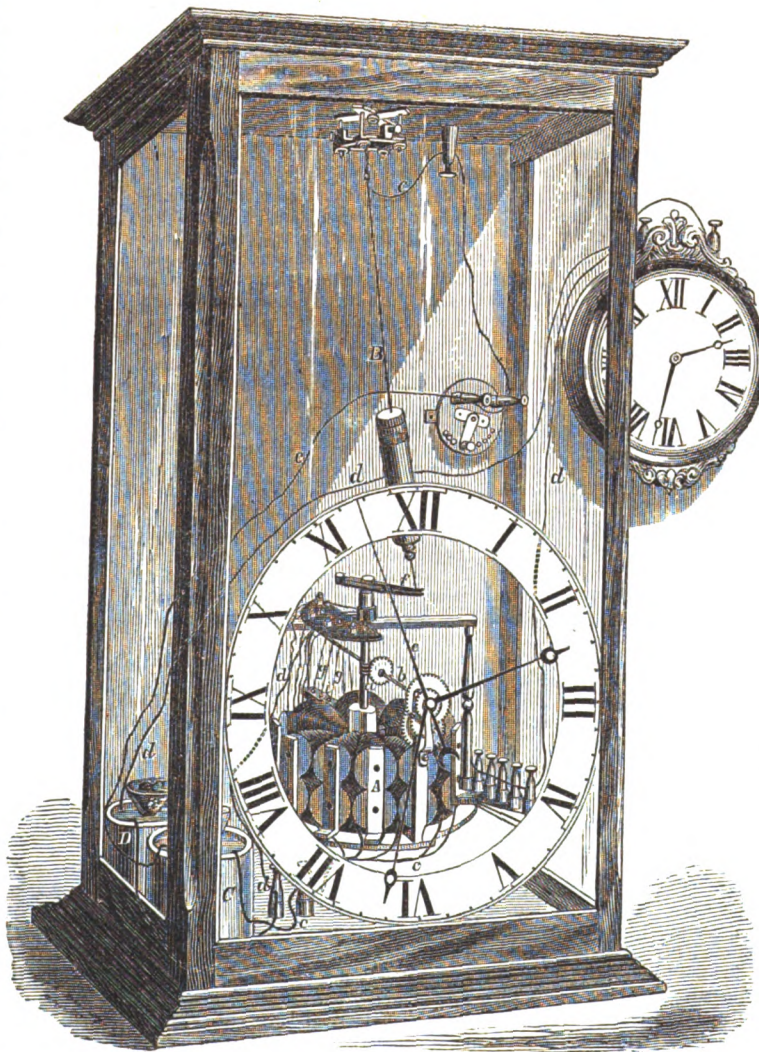
A great advantage is obtained from the substitution of the conical for the oscillating pendulum, in the certainty of closing the circuits. The oscillating pendulum closes the circuit towards or at the close of each oscillation when its momentum is checked, but the momentum of the conical pendulum is uniform throughout each revolution or gyration.

Dr. Bradley has had in successful operation in his office, during the past five months, a primary clock, driven by a weight and actuating and governing several secondary clocks operated isochronally by electricity. In the recent Fair of the American Institute he had in the main building a primary clock run by electricity, and working two secondary dials, one in the sewing machine room and the other in the restaurant.

A patent for certain of the improvements embraced in this system of electric time keeping was obtained through the "American Artisan Patent Agency" on September 28, 1869, and patents for further improvements are now in progress. Any further desired information may be obtained from the patentee, by addressing him at No. 7 Exchange Place, Jersey City, N. J.

Mr. GEORGE S. THOMPSON, the well known telegraph constructor, has just completed a private telegraph line, built for Ogden & Co., from the corner of Hubert and Washington streets to Twenty-first street and Thirteenth avenue.

It is understood that the post of engineer, in the new department of British Post-office telegraphs, will be conferred upon Mr. R. S. Culley, the present engineer of the Electric and International Telegraph Company.



BRADLEY'S PATENT ELECTRIC CLOCK.

mary clock and pendulum. The centrifugal force generated in the pendulum by its conical gyration tends to throw it out; but the moment it is thrown beyond the periphery of a given circle, at the plane of contact with the springs aforesaid, the circuit breaks and the centrifugal tendency is arrested by the temporary suspension of the electric force. The pendulum, therefore, rotates or gyrates just at the point of opening and closing the circuit, and is, so to speak, constantly helping itself to the exact amount of force necessary to maintain it at a uniform amplitude of gyration under the variations in the electric force of the battery or engine.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all Telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

A Poetical Line Report.

RICHMOND, VA., Oct. 26.

TO THE EDITOR OF THE TELEGRAPHER.

THE following has never appeared in print. Please ventilate it if you think it worthy a place in your columns:

Years ago, when telegraphing was yet in its infancy, there was stationed at Fredericksburg, in this State, a watchman (as they were then called) by the name of Creighton. Learning telegraphing at the same office was a mischievous boy, named Dorsey Eve, who was always looking for a chance to play a joke on some one. Creighton coming in from a trip over his section, asked Dorsey to send his "report" to John Kendall, who was then General Superintendent.

Seeing fun ahead, this Eve readily agreed to, and stepping to the key sent the following:

"Started out at ten to-day,
Got a mile or so upon my way;
Found the lines completely down,
The glasses from their brackets thrown.

"The wire broken once or twice,
Nought had I wherewith to splice
The same, else I had sooner come
To greet my little ones at home.

"O home, dear home, there is no place
On earth's broad bounds where I can trace
A dearer, sweeter, lovelier spot
Than where my good wife boils the pot.

"But, to proceed about the line,
I spliced it with a piece of twine;
Testing then, I went to work it,
But found I did not have a circuit.

"I then proceeded to "Fr." station
In a state of mental aberration,
Procured the wire that I wanted,
And on my outward journey jaunted.

"Soon the job was neatly done,
And I returned to-day at one.
Very respectfully yours,
JNO. W. CREIGHTON."

It was currently reported among the fraternity, at the time of the perpetration of this joke, that no one enjoyed it more than Mr. Kendall; but he slightly reprimanded Creighton, and suggested that, in future, he would prefer to have his reports in prose.

Mr. Kendall has long since answered the call of the Master, and closed the circuit of this life. The other parties are still living, and will, I trust, pardon me for this free use of their names.

All old Washington and New Orleans operators will recognize the above, and I trust your readers of to-day will enjoy it as much as we did then.

I close by wishing THE TELEGRAPHER all success in its manly and independent course. C. H. W.

Support the Telegrapher.—Its Beneficial Influence.

WASHINGTON, D. C., Nov. 21st.

TO THE EDITOR OF THE TELEGRAPHER.

It is gratifying to see the interest manifested by the telegraphic fraternity, as shown by the widely distributed voluntary correspondence of THE TELEGRAPHER, and the numerous communications weekly appearing, keeping us fully posted in regard to matters of personal and telegraphic interests. Our paper is constantly growing in favor in Washington, and its editorial management meets with general approval. Most of the operators here are subscribers, but a few refuse to pay for it, although it is a noticeable fact that these latter are the most anxious to read the paper, and, in fact, are the first who do read it on its weekly appearance. When asked to subscribe they give some lame or absurd reason for not supporting the paper, while at the same time they are compelled to acknowledge the interest they take in its perusal. It is to be hoped that these economists may soon see the error of their ways, and realize the fact that it would be a disgrace to the fraternity to allow the only organ of the telegraph operators in this country or the world to want for support, especially on such flimsy excuses as are usually offered.

The correspondence published in THE TELEGRAPHER is one of its most interesting features. It is very gratifying to hear from our brothers of the key in different sections of the country and in foreign lands. The expositions in these letters, and editorially, of cases of ill-treatment and injustice towards operators, have been the means of abating them to a certain extent. We hope that this course will be still further pursued, and may continue to result beneficially, and lead to a discontinuance of the enforcement of unnecessary regulations, such as the "Register

System," in vogue in the Western Union office here. It must not be supposed that, because the Washington correspondents have devoted so much space to the Western Union office here, there is nothing to correct in the offices of the other companies in this city. On the contrary, the other offices might be very profitably ventilated a little, as it is well known they need it, and, unless I am mistaken, it will be done before long. MAGNETS.

Telegraphers, and their Duties to their Employers.

PHILADELPHIA, Nov. 16th.

TO THE EDITOR OF THE TELEGRAPHER.

THE late successful strike of the Franklin line operators has caused much discussion of the relative duties of employers and employees; and as I am interested in the matter to a certain extent, I feel constrained to make a few remarks on the subject.

Mr. James G. Smith, the Superintendent of that line, complained very bitterly, during the continuance of the demonstration, that the employees on the Franklin line had formed an association or league for the purpose of conspiring against the Company and forcing them to concede such terms as the employees might dictate; and that the abrupt manner in which they acted was not treating the Company in a decent manner.

It will be remembered that many of these employees had worked faithfully for the Company, from its inception as an independent corporation till within a few months of the strike, without asking for an increase of pay.

After fully investigating the matter, it was found the Company could reasonably pay from twenty to twenty-five per cent. more on salaries than was then being paid; and after repeated applications on the part of the operators, and many promises of remuneration for services (illegally) by the Company, a meeting of the Franklin men was called, and definite action taken as to the best course to be pursued by them in obtaining the desired increase, and other means being found unavailing, a strike was finally decided upon.

The result of this struggle for supremacy has demonstrated the fact that telegraphers can and will stand by each other, ever upholding the honor and integrity of the profession, and that they are not to be trampled upon by their employers, or by those whose only thought is gain, and whose chief study is how to obtain more work out of the already overworked and underpaid operators. And because the employees of the various corporations will not submit to such tyranny—for tyranny it is—and go so far as to incite a strike among their fellow laborers, they are constantly subjected to petty persecutions, which makes it anything but tolerable for them.

Do we, then, owe these Telegraphic Corporations a duty, to be performed by us, so sacred that we should be subject to their whims and caprices? What have they done for us that we should submit to such treatment? Nothing but the meting out to us from day to day of plenty of work and "very poor pay." And then we are told we are not doing our duty—that we are treating the Company in a most shameful manner, because we take things in our own hands, and try to remedy evils which should never have existed. What graciousness and greatness is manifested by some of our illustrious moguls when they condescend to bestow an act of kindness upon the unfortunate operator, in the way of "I'll raise your salary five dollars a month more," after years of toil.

Even if we allow the accusing supposition of the worthy superintendent of the Franklin line, that an association of operators was in existence, who was the cause of it? If Telegraph corporations will not pay an operator a salary sufficient to compensate him for his ability as an operator, and for the work performed by him daily in behalf of the Company, then operators must, of a necessity, assume an attitude of defence, and combine their efforts to obtain a just and equitable division of the Company's profits—for, without their aid, who are to work the wires and attend to the transmission of business generally—and where would their profits be?

Our business is peculiar in itself, and we can liken it to no other profession. It requires a long time before the operator becomes proficient in the art; and after devoting many of the best years of his life to its study, and to the maintenance of the Company, his time, services and talents should, in return, receive adequate compensation, which would encourage others to take a livelier interest in all that concerns the welfare of the Company than is now usually exhibited. Then would the employers' and the employees' interests become one and the same, and the latter perform their duty cheerfully and faithfully towards the former.

But this harmony of feeling between employer and employee will never exist until the fraternity take the aggressive and show the monopoly and minor Companies that they (the operators) are to be treated as men, not as mere hirelings, and paid for their services in accordance with their abilities.

It has been thought by some that since the late Franklin demonstration a spirit of revenge would prevail among operators generally towards their employers for past wrongs inflicted, thereby occasioning another strike, and, if successful, there would be no end to their demands on the Companies. This is not so; and having a fair knowledge of the fraternity generally, and knowing the greater portion of them to be gentlemen of intelligence and good standing, I can safely say, should they in the future take the offensive towards their employers, nothing but what is fair and reasonable would be asked.

There should be three grades of operators—first, second and third class—each paid a certain sum for their services, and enough to interest them in their employers' business. Let the standard of the profession be elevated to what it should be—first class; then each and every beginner will understand that he has an object to work for, and that the topmost round of the ladder is not to be reached without close and diligent study of the profession he has adopted.

As things are, we hardly owe these Telegraphic Corporations the duty we now perform towards them. Can any one suggest a good and inflexible remedy? What do my fellow victims think of it? Can any and will any of them respond? OUIDA.

"Up the River."

ST. PAUL, MINN., Nov. 11th.

TO THE EDITOR OF THE TELEGRAPHER.

FOR the information of your Toronto correspondent I quote the following item from the St. Paul Dispatch, Oct. 30th, which explains the northwest extension: "The Northwestern Telegraph Company, whose lines extend through Wisconsin, Minnesota and Northern Michigan, have opened an office at Litchfield, half way to Breckenridge. They are also building on the McGregor and Missouri Railroad. The same enterprising company are making preparations to extend their lines to Fort Garry, in the British Possessions, next summer. They have contracted for 7,000 poles, and as soon spring opens will commence the work of extending the line to Breckenridge, and thence on to Fort Garry."

The St. Paul and Pacific Railroad is expected to reach Breckenridge by the 1st of July next.

The Lake Superior and Mississippi Railroad Company's wire is finished, and in operation to day, from St. Paul to Duluth, on Lake Superior.

Several bulls have lately got out, and are roaming at large amongst us, and, although we prefer to let slide each other's failings, we must note down one on a friend in Iowa. The telegraph office is situated several blocks from the railway depot, and the operator received a dispatch to the conductor, requesting him to bring all the empty cars by first train to the junction. The word empties looked very much like employees, and was so translated, and the dispatch rushed to the conductor. The train was ready to start, and the employees could not well be gathered together immediately to go forward to the scene of the supposed catastrophe. A further examination of the paper strip cleared up the mystery, and the "empties" went on their way rejoicing.

N. B.—The employees have received no further orders to move forward.

Before closing we would like to scold several operators in this State for their lavish waste of dots in the letters a, h, p, b and c, but charitably attribute this failing to the effects of our shivering cold weather on the operators. Z.

Justice to a Franklin Manager.

BALTIMORE, MD., Nov. 16th.

TO THE EDITOR OF THE TELEGRAPHER.

IN your issue of the 6th inst. I notice the name of Kennedy Duff, of Baltimore, among those of the renegades who refused to acquiesce in the movement of the operators of the Franklin Company for the increase of salary, to which they were so justly entitled. This is incorrect.

Although Mr. Duff retained his position we had most positive assurances that his sympathies, to the fullest extent, were with us. He did his duty toward the Baltimore strikers in precisely the same manner Mr. Leaning performed his toward our New York brethren—that is, protecting our interests at home while we engaged the enemy. Had it been necessary, he would, without a doubt, have enrolled himself under the banner of the strikers. By inserting this you will do an act of justice to a brother, who we know has been unintentionally wronged. There is general condemnation here of the conduct of C. H. Burd, of Boston, in the late strike, and I fervently hope that the day is not far distant when all such lightweight men will have to pack up and leave for parts unknown. I cannot close without complimenting you upon the high standard to which you have advanced THE TELEGRAPHER, and assure you of the kind wishes and hearty support of your many friends in the Monumental City. BALTIMORE STRIKER.

Telegraph Matters in the Dominion.

TORONTO, Nov. 15th.

TO THE EDITOR OF THE TELEGRAPHER.

SINCE my last the winter has come upon us so suddenly as to stop all building in connection with telegraph lines in the Dominion. The prospects for next summer look well, and Canada will soon be fully supplied with telegraphic facilities.

The Plug factory here has had a new lease of life; four or five new victims having been drawn into the net this week.

Mr. S. N. Parsons, lately of the Welland House, St. Catharines office, and who has been acting as operator and clerk in the Rossin House of this city for some weeks, left to-day for his home at Beamsville, Ontario, where he proposes to rusticate for a season. His "genial countenance" will be much missed.

E. B. McNairn, formerly of the U. S. Military Telegraph, has taken a position as operator in the train despatcher's office, Great Western Railway, London.

LOCAL

PERSONALS.

Mr. R. M. STAPP (not Mr. R. STOFF, as previously announced) has taken charge of the Bowling Green, Ky., telegraph office of the Louisville and Nashville R. R.

Mr. ED. GREEN has been appointed manager of the St. Louis office of the Pacific and Atlantic Telegraph Company.

Mr. HOWARD K. CLARKE, formerly manager of the St. Louis office, has been appointed chief operator of the Southern Division of the Pacific and Atlantic Telegraph Company from St. Louis to Dubuque, with headquarters at St. Louis.

DR. N. GREEN, of Louisville, Ky., First Vice-President of the Western Union Telegraph Company, has been elected President of the Lexington, Cincinnati and Louisville R. R. Company.

THE TELEGRAPH.

(By Atlantic Cable.)

A Telegraph Cable Through the Suez Canal.

PORT SAID, Egypt, Nov. 22.—The ship Hawk, belonging to the telegraph service, has passed through the Suez Canal. She will lay a telegraph cable from this point to Suez on the bottom of the canal.

LONDON, Nov. 24.—The shares of the French Cable Company declined five shillings in this market yesterday, on the announcement that the Anglo American Company had leased one of their cables to a German Company for a series of years.

Further Reduction of Tolls.

THE Pacific and Atlantic Telegraph Company made a further reduction of tolls, on Saturday last, to Chicago, to one dollar, and to St. Louis, a dollar and a half. The Western Union and Atlantic and Pacific also reduced to these figures on Monday morning. What company will make the next jump downward?

Damage to the Telegraph.

ON Tuesday and Wednesday of last week a fierce storm prevailed, especially at the West and East, doing great damage to telegraph lines, and greatly interfering with telegraphic communication. The storm was not as severe at the South, although some damage was done in that direction.

Increase of Facilities.

THE Atlantic and Pacific Telegraph Company have just completed a fourth wire to Poughkeepsie, and have placed a cross-arm on the poles, and have straightened up and put the line in order for the winter to that point.

Post Office Telegraphs in Ireland.—The Insulators Manufactured in Ireland.

THE Dublin Evening Mail, of the 16th of November, publishes the following notes on this all-important subject:

"We have already directed attention to the extensions now being made by the Electric Telegraph Company, whose wires have hitherto run through a few of the most important towns in Ireland. There can be no doubt that great benefit will accrue to the public by these extensions. It will, however, be a source of still greater satisfaction to the public to learn that the Magnetic Telegraph Company, whose wires run through the entire country, are now rapidly carrying out a more complete system,

and the wires are now being extended under the supervision of the well known and distinguished electrician, B. D. Watlock, assisted by an efficient staff of engineers.

"The following are some of the northern towns (the writer enumerates eighty towns and villages) to which new wires are already being erected, and it is expected they will shortly be in direct communication with the General Post Office, Dublin. The southern and western sections will be commenced immediately.

"One highly gratifying feature, in connection with these extensions of the government telegraphs, is to be found in the great encouragement given to Irish manufacture; the whole of the insulators are being manufactured at the Belleek Potteries."

Telegraphic Connection of London and Australia.

TELEGRAPHIC communication between London and Australia may be anticipated at no distant period, as there are now only one or two short sections requisite to complete the circuits between Sydney and London. It is estimated that that portion in which Australia is chiefly concerned, namely, from the Gulf of Carpentaria to the Island of Java, a distance of 1,900 miles, could be laid for £500,000. Application has been made to the Government of Dutch India for a concession to land a cable on the east coast of India, to connect Australia under a subsidy or guarantee. It is proposed to ask from the Governments of the Australian Colonies a guarantee of seven per cent. on a moiety of the cost of construction, and the amount which they would be asked to contribute is set down at £17,500. The proportion payable by New South Wales would simply be £4,375, in the event of the traffic not paying a dividend of seven per cent. over and above the working expenses.

Odessa and Constantinople Telegraph.

ACCORDING to the Russian Exchange Gazette, M. Kumbari, a merchant of Odessa, is now engaged, together with the Governor-General of that town, in making preparations for the construction of a sub-marine telegraph from Odessa to Constantinople.

The following particulars appear in the Eastern Budget relative to this project: "The project is warmly supported by the Department of Commerce in Odessa, and a company in London has offered to complete the undertaking for £75,000. It is calculated that, in order to obtain a return of five per cent. on the capital, at least 50 despatches a day, or 18,000 a year, will have to be forwarded. The New Russian Telegraph says that the laying of this cable will be of the greatest advantage to Southern Russia, as telegrams can now only be forwarded between Odessa and Constantinople, via Vienna and the Danubian provinces. At the station of Toulchia so many messages are received that they are sometimes delayed from two to eight days.

Liability of Telegraph Companies.

THE Superior Court at Augusta, Georgia, Nov. 17th, rendered a decision in the case of Odell vs. the Western Union Telegraph Company, giving the plaintiff \$16 damages. The damages claimed were \$2,000 for an error in the transmission of a telegraph message. The court and jury decided that telegraph companies are not considered common carriers; that they are not responsible for errors of atmospheric electricity, over which they have no control; that the printed rules and regulations of the telegraph company are a special contract, binding on the parties who use the telegraph lines; that the damages awarded the plaintiff were the actual expense for the transmission of the message and express expenses on the money package missent by an error of the telegraph. The court also decided that telegraph companies are not responsible for errors, delays, and so forth, when their lines or territory are under the control and supervision of military authority.

A Ridiculous Statement.

THE following ridiculous statement is being generally printed in the newspapers: "The Paris hospitals are hereafter to be heated by electricity instead of coal. The experiment was tried with success at the Hotel Dieu recently."

THE West India and Panama Telegraph Company continue to give evidence of their intention to proceed actively with the work which is to place Panama in telegraphic communication with the United States and Europe. An application has been made to the English Government by the Company in order to obtain the services of a man-of-war to make the soundings along the route. An agent has also been appointed for the company in Jamaica.

TELEGRAPHIC BREVITIES.

VALPARAISO advices of Oct. 17th state that Chili is rapidly pushing forward her enterprises for the improvement and opening up of the country, and is especially interested just now in the extension of telegraph lines.

At a quarter to four, Saturday afternoon, November 6, the steamship Great Eastern, with upwards of 3,000 miles of Anglo-Indian cable on board, weighed anchor, and took her departure from the Portland roadstead, England, under the command of Captain Halpen. At 5 o'clock the big ship was clear in the strait, and at half past five she was lost to view in the westward, steaming at the rate of seven knots an hour.

A deputation from the West India and Panama Telegraph Company—Mr. McGregor, Mr. Chambers, and the engineer of the company, Sir Charles Bright—waited on the first Lord of the Admiralty recently with reference to telegraphic communication with all the British Colonies in the West Indies, and their connection with North and South America.

The Great Western Telegraph Company has purchased three of Sterns' double transmitters, and will immediately place them upon the line between Chicago and Milwaukee, to meet the requirements of the rapid increase of their business.

The report of Prof. Morse on the telegraph department of the Paris International Exhibition, now being printed at the government printing office, will be completed and delivered to the Department of State in three weeks.

Writes Like a Man.

A QUIET family in the country were electrified, the other day, by the receipt of a telegraphic dispatch from a daughter, who was teaching in a distant city. The telegram was passed around and duly admired. The dashing boldness of the chirography came in for its share of the praise. The old lady shook her head with an air of gratified pride, as she ejaculated, slowly:

"Anna Maria allers did write like a man; she's been takin' writin' lessons; this here beats her last letter all holler!"

New Patents.

For the week ending Nov. 23, and each bearing that date.

No. 97,076.—DIAL TELEGRAPH APPARATUS. Ezra T. Gilliland, Cincinnati Ohio, assignor to himself and Peter Neff, Jr.

I claim the provision in a dial telegraph of the shaft C, ratchet F, pawl G, and arm H, or their equivalents; said shaft and arm being so arranged as to impinge at the termination of each stroke of the latter, as and for the purpose set forth.

No. 97,241.—ELECTRIC FUSE. H. Julius Smith, Boston, Mass.

I claim, 1. Securing the ends of the insulated wires within the shell of the fuse by a disk, substantially as described.

2. Uniting the two parallel insulated wires by a non-conducting thread, substantially as described, to allow the wires to be separated, as specified.

Recent British Patents.

No. 2,655.—HENRI ADRIEN BONNEVILLE, 10 Sackville street.

Improvements in electric batteries. Provisional protection for six months.

No. 2,671.—WILLIAM ALEXANDER LYTLE, Grove, Hammersmith.

Improvements in telegraph posts. Provisional protection for six months.

No. 2,712.—AUGUSTUS COLLINGRIDGE, Moorgate street.

Improvements in the mode of stowing and laying submarine telegraph cables. Provisional protection for six months.

No. 2,728.—SAMUEL ALFRED VARLEY, 66 Roman road, Holloway.

Improvements in electric telegraphs, and in apparatus employed in their construction, parts of which improvements are applicable for other purposes. Provisional protection for six months.

Provisional Protection for Six Months.

No. 2,875.—CHARLES TILSTON BRIGHT, 6 Westminster Chambers.

Improvements in electric telegraphs.

No. 2,907.—EDWARD TYER, 15 Old Jewry Chambers.

Improvements in electro-magnetic telegraphic apparatus for train signalling on railways, parts of which apparatus may be employed for other useful purposes.

No. 2,935.—RICHARD LOCKYER HICKES.

Improvements in the modes or methods of applying electricity to obtain motive power, and for other useful purposes.

No. 3,010.—EDWARD THOMAS HUGHES.

Improvements in means and apparatus for regulating or controlling the delivery of tickets at railway stations and other similar places, part of which improvement is applicable to telegraphic purposes.

No. 3,038.—CHARLES ERNESTO SPAGNOLETTI, Telegraph Department Great Western Railway.

Improvements in apparatus for signalling by means of electricity, on which the stamp duty of £50 has been paid.

Improvements in electric telegraphs. JOSEPH LATIMER CLARK. Dated Nov. 19th, 1869.

MARRIED.

STOW-BARNUM.—At No. 701 Clair Street, Cleveland, Ohio, Nov. 16th, by the Rev. D. PROSSER, Mr. O. F. STOW to Miss ROSA M. BARNUM.



SATURDAY, NOVEMBER 27, 1869.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.

Vice-President..W. O. LEWIS....New York.

Treasurer.....A. L. WHIPPLE..Box 39 P. O., Albany, N. Y.

Recording Sec..W. W. BURHANS..Box 6010, P. O., New York.

Corres. Sec....F. L. POPE....Box 6010 P. O., N. Y.

TELEGRAPHIC COMPETITION.

THE indications are that we are once more about to witness an active telegraphic competition. The Pacific and Atlantic Telegraph Company have again made a considerable reduction in the charges for telegraphing to Chicago and other points reached by them, and, of course, the Western Union and other companies have no option but to follow that company in this downward movement.

The boldness of this company has rather taken the other companies by surprise, and it remains to be seen whether they will simply drop to the rates proposed by the P. and A. Company, or still further reduce the tolls.

The readers of THE TELEGRAPHER are aware that we have not regarded a material reduction of previously established rates as desirable, under existing circumstances. Telegraphing, from its nature, is an expensive business, and we do not believe that any very material reduction can work advantageously for the proprietors of telegraph lines, or ultimately for the public or for the practical telegraphers. Until the capacity of the instruments for the transmission of business can be largely increased, or a more equable distribution of business during the day and night can be made, we do not see how telegraphing can be made a paying business at cheap rates. We have no more interest in this matter than any other patron of telegraph lines, except in so far as it is likely to affect the salaries of telegraphers.

It is undoubtedly a fact, however, that the Western Union Company has no claim to sympathy in this business. It has resorted without mercy to the policy of a reduction to non-paying rates on routes where competing lines have been built, for the purpose of crushing out its rivals. This was the case in California, where it succeeded by such tactics in defeating and absorbing the Atlantic and Pacific States Company, and more recently between Chicago and Milwaukee, and other places in that section of the country covered by the Great Western Company. The Western Union Company doubtless considers itself strong enough to stand a pressure of this kind, and its managers believe that they can thus ruin any opposing company, and re-establish the monopoly which is now so generally threatened. This course will, no doubt, if continued, lead to another suspension of dividends, and, perhaps to a demand on the part of the Western Union managers that the Government shall relieve them of their burden, and assume the telegraph business of the country.

The Pacific and Atlantic Company has apparently been heretofore managed with much shrewdness. It has made but little talk of what it intended to do, but has gone on quietly extending its lines, and absorbing the lines of weaker companies, until now it covers more ground, and offers greater telegraphic facilities than any other compe-

ting company. It is understood that its plans are very comprehensive, and look to the formation of a telegraph system fully able to cope with the Western Union. Its movements of late have shown a disposition to assume a lead in the contest for telegraphic supremacy. It employs the best attainable telegraphic talent, incurring fearlessly any necessary expense attendant thereon, and looking confidently to the public to sustain the enterprise.

In their efforts they have unquestionably the sympathy of the public, which is naturally restive under the appearance of anything like monopoly in the telegraph business. As we regard it of the first importance that there should be competition in telegraphing, we heartily sympathize in every legitimate effort to establish competing lines. We trust that the P. and A., and all other competing lines, may meet with success, and that the managers of such companies may soon realize the wisdom of combining their several enterprises in one consolidated enterprise. With such a consolidation of capital, talent and effort, we believe that the result of any contest that might arise would not be doubtful.

Every telegraph employé is interested in this matter, and we shall watch the progress of the contest closely, and keep our readers fully informed in regard thereto.

The Metropolitan Telegraph Company.

THE subject of Metropolitan telegraphs has presented a problem which has heretofore been found difficult of profitable solution. That telegraphic facilities ought to exist between different parts of a large city has been universally admitted; but all attempts hitherto to establish and maintain Metropolitan lines have resulted in pecuniary failure. Why this has been the result, and why, under any plan heretofore inaugurated, city telegraph lines must inevitably prove a loss to their managers and proprietors, has been very fully demonstrated in THE TELEGRAPHER. The basis upon which such enterprises have heretofore been undertaken has been altogether erroneous, and the results have consequently been disastrous. They have neither been properly built, properly equipped, properly worked, or properly managed.

Not disheartened by previous failures, the managers of THE METROPOLITAN TELEGRAPH COMPANY propose to construct an entirely new system of Metropolitan lines and offices, upon a basis which its projectors believe can be made to pay. Much time, skill and careful study have been bestowed upon this scheme, which is now presented to the public with confidence that its premises are correct, and the conclusions as to its feasibility and pecuniary success are sound.

The American and Western Union Telegraph Companies have for many years maintained a system of city telegraph lines and stations of considerable magnitude and extent, but these have always been worked in connection with the general telegraphic system of these companies, and the numerous offices established have merely served as branch offices for the reception and distribution of messages passing between this city and distant points. The development of a local business has been entirely a secondary matter, and the administration of the lines, at least in respect to the latter class of business, has not been such as would be calculated to develop it to any great extent. An attempt was made, two or three years since, to inaugurate a system of city telegraph lines exclusively for local business, which, however, did not prove successful. One of the principal reasons of its failure consisted in the fact that the attempt was made upon too small a scale. It is obvious that the profits of an enterprise like a city telegraph must necessarily depend upon the transaction of a large amount of business at very low rates. A system consisting of only two wires and a dozen widely scattered offices could not possibly transact any great amount of business, or with any degree of promptness, and it was not to be expected, under these circumstances, that the enterprise would prove profitable. When we add to this the fact that the present system of constructing lines in cities is such as to

render them peculiarly liable to interruptions of every kind, and that the multiplicity of naked wires crossing each other in every conceivable direction renders it impossible to keep them from frequently coming in contact with each other, and the constant accumulation of smoke and dirt upon the surface of the insulators renders it a difficult and expensive task to keep the lines in anything approaching to working order, the vexation and delay to business, and loss which arises in consequence are almost beyond calculation.

The Metropolitan Telegraph Company have wisely profited by the experience and mistakes of their predecessors. They propose to establish a comprehensive and complete system at the outset, sufficient to cover every possible requirement of the service, and to construct a carefully insulated system of subterranean lines beneath the pavements, which will remain as free from interruption as the water and gas pipes do at the present time, enabling the full working capacity of the system to be available at all times.

With the improved lines and instruments which are to be adopted by this company, and the good business management which the names of its officers may reasonably lead us to expect, the system of Metropolitan intercommunication seems destined for the first time to be fairly tried, and we wish its projectors the abundant success which their undertaking seems to merit.

Bradley's Electric Clocks.

WE publish on the first page of the present number an illustrated description of Dr. L. BRADLEY'S system of electric clocks, which received the first premium at the late Fair of the American Institute in this city. This novel and ingenious application of electricity to time-keeping attracted a throng of curious spectators from the day it was put in operation until the close of the exhibition. The manner in which some of the most serious difficulties which have been encountered by previous inventors have been surmounted in this invention is worthy of especial notice. The article in question is reprinted from the *American Artisan*, and will be found exceedingly interesting, as a description of what we consider a reliable and practical system of electric clocks.

A Proposed Dutch Cable.

It is reported from Washington that a person named JEWETT has had an interview with the President, on the subject of a franchise from the Netherlands Government, for a cable from New York to the Hague, the object being to give our Government an opportunity to unite in the establishment of the line on a basis of reciprocity.

As this JEWETT is noted for his engineering of impracticable schemes, it is not probable that anybody can be found in this country to invest money in this or any other project of which he is the originator or manager.

The German Connection with the Atlantic Cable.

ON Tuesday a dispatch to the Associated Press, from London, stated that one cable of the Anglo-American Company had been leased for the use of the proposed line from Germany to the United States. This is incorrect. We are informed that an arrangement has been closed with the proposed line, by which it is to be connected with the Anglo-American Company at Valentia, and its business is to be forwarded by that company to the United States, exclusively. If the North German Confederation Government chooses to do so, it has the right to send its messages over the cable by an operator of its own selection. The Germans are to lay a cable from Germany to England and run a line across the country to Valentia for their own use.

The Anglo-American Cable Company do not, by this arrangement, lease either of its cables, but practically forms a connection under a contract which is made for a term of five years.

THE METROPOLITAN TELEGRAPH COMPANY, OF NEW YORK CITY.

Incorporated January 15, 1869.

CAPITAL STOCK, --- \$1,000,000.

10,000 SHARES, AT \$100 EACH.

EXECUTIVE OFFICE, 22 Broad St., Room 11.

OFFICERS OF THE COMPANY.

President.....Gen. ROBERT B. POTTER.
Vice-President.....WILLIAM E. HOY.
Secretary.....WILLIAM B. DINSMORE, Jr.
Treasurer.....Hon. EDWARD HAIGHT.
Engineer-in-Chief.....G. HOWARD-ELLERS, C. E.

GENERAL SUPERINTENDENT—MERRITT L. WOOD.
CONSULTING ENGINEER AND ELECTRICIAN—FRANK L. POPE.
COUNSEL—E. E. & E. H. ANDERSON, Counsellors-at-Law, 54 Wall Street.

ASSISTANT SECRETARY—JOSEPH WOODWARD.

DIRECTORS.

SAMUEL U. F. ODELL, of Barclay & Livingston, 24 Beaver Street.
Gen. CHARLES ROOME, President Manhattan Gas Company, Irving Place.
Hon. EDWARD HAIGHT, President National Bank of the Commonwealth, 15 Nassau Street.
WILLIAM E. HOY, President N. Y. M. G. L. Co., 14 and 16 Wall Street.
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Gen. JAMES F. HALL, Vice-President, &c., 32 Platt Street.
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WILLIAM H. GRENELLE, President T. S. Co., 32 Platt Street.
JOHN R. LYDECKER, Deputy Collector of the Port, Custom House, Wall Street.
Gen. ROBERT B. POTTER, President, &c., 61 Wall Street.
GEORGE W. QUINTARD, 26 Broadway.
WILLIAM B. DINSMORE, Jr., 302 Fifth Avenue.

THIS Company will shortly establish a rapid and reliable system of Telegraphic Communication between every portion of New York City and its Suburbs, by the use of improved instruments, and a perfectly insulated system of conducting wires, which will enable them to guarantee the delivery of messages within fifteen minutes; and being provided with facilities for the transmission of an almost unlimited number of messages, cannot fail of securing a *profitable business*, at the low charge of TEN CENTS for each message of ten words.

The system of conductors employed is the invention of Dr. A. Foucault, combining many wires in a single cable, thus uniting durability with economy, both in construction and repairs. The constant and annoying interruptions incident to the present mode of construction upon poles, and with naked wires, are entirely obviated by enclosing the main lines in subterranean galleries or pipes. This arrangement secures an uninterrupted communication at all times, and under all atmospheric conditions.

The Company will also be prepared to furnish private wires for connecting warehouses with manufactories, and dwellings with offices, with suitable instruments, at reasonable rates.

Subscriptions to the capital stock received at the office of

TURNER BROS., cor. Pine and Nassau Sts.

THE TELEGRAPHER.

VOLUME FIVE, BOUND.

A few Bound Copies of VOLUME FIVE of THE TELEGRAPHER are for sale by the Publisher. These Volumes are Handsomely and Substantially Bound in Half Turkey Binding, and will be sold at Five Dollars each.

Persons having complete sets of Volume Five, well preserved, can exchange them for Bound Copies on payment of Three Dollars.

AMERICAN FIRE ALARM AND POLICE TELEGRAPH, GAMEWELL & CO., Proprietors, 104 Centre Street, N. Y.

This system of Fire Alarm Telegraph, with a central office, or upon the

AUTOMATIC PLAN,
is now in operation in the following cities, to which reference is made for evidence of its great superiority and value, and UNIFORM reliability:

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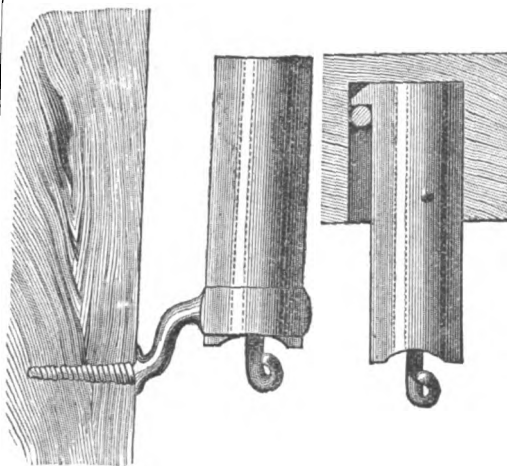
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W. H. PARSONS, " " Utica, N. Y.

CHAS. E. HIGDEN, " " Cincinnati, O.

E. W. SNIDER, " " Clinton, Iowa.

R. VALENTINE, W. U. & N. W. Tel., Jamesville, Wis.

DAVID MORRISON, Mont'l Telg. Co., Millpoint, Canada.

HUGH NELSON, Dominion Telg. Co., Toronto, Canada.

W. B. RICE, Salem, Oregon.

C. W. NORTHBROOK, A. & P. Telg. Office, Rhinebeck, N. Y.

W. H. WEED, Supt. Midland R.R. Tel., Oneida, N. Y.

GEO. L. WALKER, T. P. and W. R. R., Peoria, Ill.

W. W. CAMPBELL, News Agent, Fairmount, W. Va.

ERASTUS D. MOORE, Quincy, Ill.

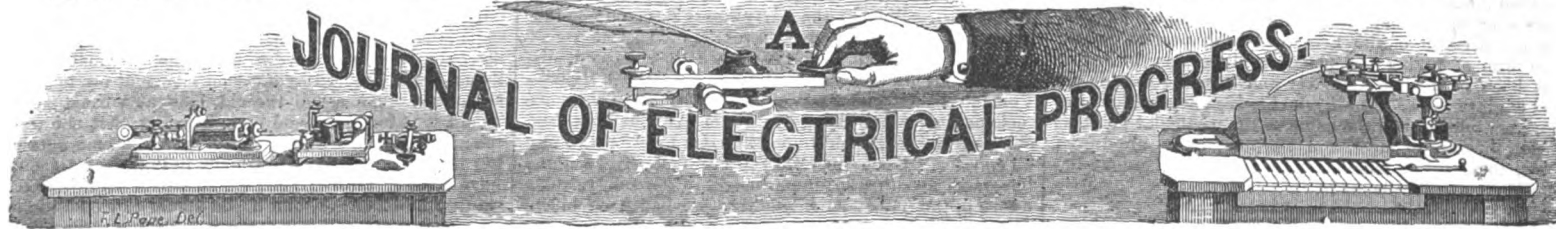
All Communications and Letters relating to, or intended for THE TELEGRAPHER, must be addressed to

J. N. ASHLEY,

Publisher and Editor,

(P. O. Box 6014)

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[From the Daily News, Nov. 18.]

THE FRENCH CABLE.—GENERAL MEETING OF THE COMPANY.—CONDITION OF AFFAIRS.

A GENERAL meeting of the Société du Cable Transatlantique Français was held yesterday at the Terminus Hotel, Cannon street, to receive the report of the Directors and the statement of accounts. Viscount Monck presided.

The report was taken as read.

The Chairman, in moving its adoption, congratulated the shareholders on the completion of the enterprise within the stipulated expenditure. In less than a year from the incorporation of the company they had laid and brought into operation the longest submarine cable in existence. The cable commenced transmitting messages on the 12th of August, 1869; it had since continued in successful working, and, according to the most scientific authorities, was improving in effectiveness by use. It was true that a slight, almost an imaginary, fault had been discovered, but the construction company who laid it down were so satisfied that it was of no importance, that they had left in the hands of the company £20,000 in shares due to them, to be forfeited should the fault become serious. They had had to meet many difficulties, and amongst them was the misunderstanding with the American Government in regard to the landing of the cable on the American shore. The press and the people of the United States had always sympathized with the company, and the directors had reason to know that they possessed also the sympathy of the American Government, with whom the Board was now negotiating for the arrangement of all questions affecting the relations of the company with that Government, and with such favorable prospects of a satisfactory issue that he trusted the meeting would leave the matter in the directors' hands. They had secured as their general manager in Paris M. Couchad, who at present filled the office of manager of telegraphs under the convention between the European powers, and they had entered into arrangements with the English Government, which, from the 1st of January next, when all the telegraphic communication in this country would come under the Government control, would lead to a large accession of the business. As they were aware, all the telegraph companies here were bound by working agreements with the Anglo-American Company, which agreements of course would be binding upon the Government, but a promise had been given that this company's advertisements should be displayed in all the telegraph offices, and that the public should have the option of telegraphing by either the Anglo-American or the French cable. The receipts had been gradually increasing week by week since it had been laid down, and it might enable them to form some idea of the ultimate rate of profit to know that, during the first thirteen weeks it had been in operation, the earnings of the cable had been £21,110. In the first week the receipts were £577; in the second, £746; the third, £1,040; the fourth, £1,068; the fifth, £1,323; the sixth, £1,797; the seventh, £1,710; the eighth, which was exceptional, the Anglo-American being out of order, £2,600; the ninth, £1,888; the tenth, £1,636; the eleventh, when the Anglo-American was again out of order, £2,692; the twelfth, £1,928, and the thirteenth, which was not exceptional, £2,205. They could now easily calculate what rate the receipt bore to the capital, and he had no doubt that the increase would continue for some time to come.

Baron Emile D'Erlanger seconded the motion.

Mr. Hayward inquired whether, under the articles, the meetings were to be annual or half yearly, and how often dividends would be paid? He was in favor of quarterly dividends, for he could not see any reason for leaving a large sum of money in the hands of the Board from half year to half year.

The Chairman replied that the articles stipulated for yearly, not half yearly meetings; but it was in the power of the shareholders at any time, on a requisition signed by the holders of 5,000 shares, to have a meeting called. With regard to the payment of dividends, it was the intention of the Board to hold another meeting soon, for the purpose of declaring a dividend; and it would always be their desire to distribute the profits as soon as possible after they came into their hands. Subsequently he explained that the European Governments paid only once in three months, but the receipts from New York were forwarded weekly, and from this source they had now £7,000 in hand.

Replying to other questions, he added that the French receipts were rather more than half of the whole. The future meetings would be held alternately in London and Paris. They were working on friendly terms with the Anglo-American Company, and were arranging with them a mutual tariff book.

The motion was carried unanimously. The appointment of Lord Monck and Lord W. Hay as members of the Board was confirmed, and thanks were accorded to both Messrs. Quilter and Ball, who were reappointed London auditors, and M. Salmon, Paris auditor.

A vote of thanks to the Chairman, and directors generally, concluded the proceedings.

The French Atlantic Cable.

THE report presented at the second general meeting of the Société du Cable Transatlantique Français (Limited), held at the City Terminus Hotel on November 17, states that the cables are in excellent electrical condition, their insulation has materially improved, and the practical working of them sustains no detriment whatever from the minute defect stated to exist on the section between Brest and St. Pierre, with respect to which the directors refer to a report received from the then engineers of the company. They also annex a report from Mr. C. F. Varley, the company's permanent engineer and electrician, which states that "the insulation of the cables continues to improve. The rate of transmission continues to increase as the telegraphists become more acquainted with the working. In a short time the higher appliances of science will be brought to bear upon it, and the rate of transmission and accuracy of operation will be much increased." The engineer's report states that "even should the defect, contrary to our expectation, become a thousand times greater than at present, the traffic will not be interrupted, though some inconvenience might then occasionally be felt. We do not think it possible that, with reasonable care, communications through the cable can now be permanently stopped by any development of the fault." To protect the company against the improbable event of any danger arising from this alleged defect, an arrangement has been made with the contractors (although they deny the existence of any defect) by which they have agreed to leave in the hands of the Board shares in the company representing £20,000, allotted to them in part payment, for two years from August last, with the stipulation that if called upon to do so by this company within the period named, they shall use their best endeavors to raise and repair the cable (this company holding at their disposal 100 miles of their surplus cable), and forfeit the shares should they fail in their efforts. Negotiations are pending which the directors believe will confirm the status of this company in America. The directors trust that the measures adopted by them, which have already resulted in increased speed and correctness in the transmission of messages, as well as the arrangement with the Submarine Telegraph Company for an improved and more direct connection between England and Brest, by a new channel cable, authorized by the French Government for this especial purpose, will lead to a rapid development of

traffic, the returns of which, since the line has been opened, have exhibited a satisfactory increase. The accounts have been made up to August 15 (the day of opening), with the view of exhibiting to the shareholders the position of the capital account. The altered regulations, permitting the issue of share warrants to bearer, have been largely availed of by Continental shareholders, upwards of 6,400 shares having been thus converted. Under the terms of the articles of association the ordinary meetings of the Board will be held in future in Paris; but the directors in Paris and in London have been formed into committees for the management of the business in each country, respectively, whilst the books and accounts will be submitted to the shareholders simultaneously in both cities. The capital account shows further liabilities to the amount of £57,762 on capital account, made up as follows: Telegraph Construction and Maintenance Company, £10,000; engineers, £2,500; electricians, £750; Sir James Anderson, £1,000; staff, £220; sounding expedition, £349; legal expenses in Europe, £376; St. Pierre Station, £745; travelling, £140; stationery and advertising, £680; ditto (certificates), say £500; directors' fees, £500; maintenance ship, £20,000; channel cable (less surplus part of cable, £17,500), £30,500; land lines, £7,000.

[From the N. Y. Evening Post.]

The Railway Telegraph System.—How Trains are Moved by Telegraphic Signals.

THE importance of the telegraph in connection with railways was recognized many years ago; but the first practical application of telegraphic signals in moving trains was made on the Erie line in 1850. Previous to that time locomotive engineers and conductors were distrustful, and there are several instances on record of their positive refusal to obey telegraphic orders, especially when their trains were directed to proceed beyond stations, to meet and pass trains going in opposite directions, except in cases where such orders were plainly expressed in printed orders upon their regular time tables. In 1850, however, when the Erie road had but a single track between Piermont and Elmira, it was plainly demonstrated to the superintendent (the late Charles Minot) that the telegraph would be a very important assistance to the road, and it became plainly evident that the telegraphic service must eventually be adopted upon all main trunk lines.

When the first telegraphic message was sent over the Erie wires a train filled with western bound passengers was lying at Turner's Station, awaiting the arrival of an eastern bound train, which, by the time table, should meet and pass it at that point; but, owing to an accident two hundred miles west, it could not possibly arrive until five or six hours later. Mr. Minot was a passenger upon the train lying at Turner's. He immediately decided to test the accuracy of the telegraph, and make a beginning of the plan of ordering trains to proceed to points further in advance, and not further delay the stationary train, when the track was known to be clear as far as Port Jervis, a distance of one hundred and fifty miles further west. Orders were accordingly sent over the wire to the station agent at Port Jervis to hold all easterly bound trains until the arrival of the western train. This order was given in order to make all safe, and prevent a collision in case the former should arrive at Port Jervis before the latter. An answer was immediately given by the station agent, announcing that he fully understood the order, and would do as directed. All appeared safe, and the engineer was ordered to start west; but, to the astonishment of Mr. Minot, he positively refused to move the train from Turner's upon any such arrangement. Mr. Minot immediately mounted the locomotive, pulled out the throttle valve, and ran the

train himself, assisted by the fireman, and reached Port Jervis according to programme.

The ice was broken, and since that time the telegraph has been acknowledged as a positive necessity on all long railroad lines in this country. As many as twenty trains have since moved in opposite directions at one time upon a single division of the Erie road with perfect safety. The form of giving the necessary directions, however, has been somewhat changed; and now the conductors and engineers of each train who receive telegraphic directions are telegraphed the name of the particular point at which they are to meet, and answers are required from them, to ascertain whether they understand orders, before any movement is made.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Travelling Experience of a Telegraphic Party.

PARKERSBURG, W. VA., Oct. 27th.

TO THE EDITOR OF THE TELEGRAPHER.

ON a beautiful morning in September three ex-telegraphers, well known throughout the oil regions, embarked upon Oil Creek, at Titusville, on a flat boat, for a business excursion down the stream. Before starting we had provided ourselves with a camp stove, cooking utensils, a well filled larder, and a good supply of segars, tobacco and other creature comforts. Our cargo consisted of five hundred pounds of nitro-glycerine, a large quantity of lighting fuse, gunpowder, and other explosives too dangerous to mention. With many kind wishes for our safety we boldly shoved out into the stream, our purpose being speculation, our business the explosion of torpedoes in oil wells, and our destination the oil regions of West Virginia. We passed Petroleum Centre, Oil City and intermediate points, in rapid succession, our strange looking craft and its strange looking occupants creating no little attention, and considerable inquiry from the residents as to our business. All were informed: New Orleans—selling patent clowns! At Oil City we came into the Alleghany River, where we make better time and enjoy the wild romantic scenery to be found along its banks. In two days and a half we reach Pittsburgh where we call to see the Western Union boys, who seem astonished at our dangerous calling, and risk in flat boating such freight as we had. After replenishing our larder with boiled ham, oysters, bread and butter, eggs, peaches, and three hundred "stogies," we float out upon the tranquil bosom of the Ohio and "let her pound."

Our passage to this place occupied four days and nights, stopping at Wellsville, Wheeling and Marietta, to renew our supply of provender and "stogies."

A short distance below Pittsburgh we appropriated the partition and staircase of a deserted tenement, and erected a shanty on board as a protection from the noon-day's sun and the chilling dews of night.

At Wellsville we all sallied, country fashion, into the telegraph office, and applied for situations for three. No vacancies; but we judged, from the scrutinizing look we received from the gentleman who "would like to receive fifty train orders," that he thought some telegraphic college had lately taken an emetic.

We met with numberless adventures of the most exciting and amusing nature, one of which I will relate: We were drifting lazily along with the current, a short distance above Marietta, near the Ohio side, enjoying a pleasant game of euchre, when the sound of voices attracted our attention to two women, conversing in an audible tone of voice, upon the shore.

"What's that?" says one.

"River pirates, I reckon," replied her companion.

"No; they're gamblers and robbers—don't you see their cards?"

"Yes; and they look like a floating ———."

Well, I won't say just what, but we deemed it our turn to say something, and, in a very confident manner, asked:

"Have you any fruit or berries to sell?"

"Not to the likes of you," was the emphatic response.

After some further conversation, during which, unintentionally on our part, something was said which the irate dames choose to consider derogatory; they were seized with a sudden and violent fit of passion, during which one of them became so enraged that she called her husband, threatening us with a violent death, he having a rifle that never missed fire.

The husband promptly put in an appearance, and swore that he had a skiff and a rifle and would follow us to our death. We calmly waited, and sure enough soon saw him with several friends in hot pursuit. We drew

forth a small torpedo, which we explode by means of a trigger and lock, and filled it with nitro-glycerine, and, trailing it behind, at the proper moment jerk. Bang! a deluge of water—no lives lost, but that much injured family will remember the river earthquake and the moral it conveyed. We left the party sorely discomfited, and, plying our oars lustily, we soon reached Marietta.

Upon arriving at Parkersburg we disembarked, disposed of our craft, and set out by rail for the interior—Volcano being our first objective point. There we remained a week, doing an extensive business, and enjoying the rough and tumble life one meets with in an oil country. Upon our return to Parkersburg we found telegrams awaiting us, inquiring as to our safety, and a notice in the Titusville Herald that we had been blown up above Parkersburg—two of us killed outright and the third horribly mutilated. Of course such a rumor arose from our little experiment up the river, and the confused state of mind we left our pursuers in.

We have visited Cow Run, in Ohio, Horse Neck, Bull Creek, Oil Rock, and other oil sections in this State, all bearing euphonious titles; we have been kindly treated, liberally patronized, and we take this occasion to express our most grateful thanks to managers Rainforth and his assistant, Mr. Ryan, of Parkersburg; Lucas, of Marietta, and Naylor, of Burning Springs, for many telegraphic favors extended during our sojourn among them. The latter gentleman, we regret to say, was the only one who could gladden us by a perusal of THE TELEGRAPHER. We expressed our surprise to the others at not being subscribers, but I think, Mr. Editor, if you send them a copy containing this communication, they will very willingly send forward their names, together with the "two dollars a year, strictly in advance." More anon.

QUILL.

The Bible and Shakspeare.—A Typographical Bull.

LOUISVILLE, KY., Nov. 3d.

TO THE EDITOR OF THE TELEGRAPHER.

THE following rather amusing one, occasioned by a telegraphic error, might be adduced as a verification of the trite saying that "it is but a step from the sublime to the ridiculous," and shows how easily the gravest expression may be rendered ridiculous even by the transposition of a letter. Though not admissible to your columns as a "lapse of tongue" of the wiry tongue, it may cause some of your readers to smile, and may be deemed worthy of insertion, inasmuch as the quotations will be familiar to all conversant with the literature of the telegraph.

Our superintendent, imbued with the advertising spirit of the age, issued circulars for distribution among those attending the "Commercial Convention," held here on the 14th ult., setting forth the merits of the "P & A," and embodying the following classical quotations, in the form of a message and its reply, not only with a view of treating the public to a sniff of "Belle Lettres," but also with the view of conveying the idea that it—the "P. & A."—was the chosen instrument of Puck to carry out his prophecy, in reply to Job's interrogation: "Canst thou send the lightnings that they may go and say unto thee here we are?"—Sig. Job. "I will put a girdle round about the earth in forty minutes."—Sig. Shakspeare.

But imagine his chagrin when, on reading the latter, a few days afterward, it read, "I will put a *griddle* round about the earth in forty minutes." This would have been nuts for the monopoly had they discovered it. As it is the joke is too good to keep, and occasionally a voice is heard saying, "how about that *griddle*, S.? I'll take buckwheat cakes."

The presumption is that, like the two Congressmen with the Lord's Prayer, the W. U. boys didn't know whether Puck said girdle or griddle. The book-sellers say there is an extra demand for Shakspeare and the Bible, and some of the clerical profession think that great credit is due Mr. S. for introducing the gospel, and exciting literary taste where it never existed before.

"JUVENIS."

Spoons by Telegraph.

MINEAPOLIS, MINN., Nov. 20.

TO THE EDITOR OF THE TELEGRAPHER.

ABOUT eighteen months ago I was temporarily in charge of the Western Union office at Canton, Missouri, to which place a branch line from Quincy, Ill., had then just been built. The office was opened in a jeweler's shop, the proprietor of which was to be taught the telegraphic art, and to take charge of the office, in connection with his other business, when sufficiently initiated into the dot and dash mysteries.

For the first six months, the telegraph being a novel institution in that part of the country, we were greatly bothered with the country folks, whose visit to town was considered incomplete without an inspection of the instrument, and a (to them) lucid explanation of its work-

ing. One day an old lady and gentleman from the country came to the shop to purchase sets of teaspoons and table-spoons. After a general inspection of my friend's stock, the old lady found a set of teaspoons which were exactly what she wanted, but there were no table-spoons to match, and she therefore proposed to try some other establishment. The proprietor of the store, however, was determined to make the sale, and a bright thought was inspired by a casual glance at my telegraph apparatus. He asked the old lady at what time she would start for home, and upon learning that she would remain in town for at least an hour and a half, informed her that he could send to Quincy in half that time, and have a set of table-spoons, which would match the tea, sent up by telegraph, and if she would call again in half an hour they should be there ready for her. To this she assented, and as soon as the couple had left the store the jeweler procured at another establishment the table-spoons of the desired pattern, and placed them in his show case, alongside of the teaspoons.

At the expiration of the half hour the old lady called and inquired if the spoons had been received yet from Quincy? The jeweler replied "Yes, they had come up some time ago!"

Great was the old lady's astonishment and wonder at the achievement of the telegraph, and as she left the shop with the spoons she exclaimed: "Well, I do declare, the telegraph beats the world! It is really miraculous how them spoons got here so quick!" MCB.

From the Monumental City.

BALTIMORE, Nov. 25.

TO THE EDITOR OF THE TELEGRAPHER.

TELEGRAPH matters are very quiet in the "Monumental City" at present, and little of interest to the readers of THE TELEGRAPHER is transpiring just now. The operators in the various offices here seem to be generally content, and very few changes take place.

Business here of late has been very dull, and there seems to be little prospect of immediate improvement. Rumors have again been circulated that the "Monopoly" has bargained for the Bankers and Brokers' line. How much truth there may be in these reports time will develop.

THE TELEGRAPHER is heartily welcomed on its weekly appearance here, and brightens many moments in our lives which otherwise would be "blue." Through its columns we are kept fully posted in regard to telegraph matters, and it has become to us so indispensable that we cannot understand how any telegrapher can get along without it.

A Telegraphers' Sociable.—The Netherlands Cable Concession.

WASHINGTON, D. C., Nov. 23.

TO THE EDITOR OF THE TELEGRAPHER.

ON the evening of the 25th instant a very pleasant company assembled at Mr. D. L. Findley's, for the purpose of organizing a *Telegraphers' Sociable*. Mr. W. H. Young was chosen President. About fifteen operators and their wives were present. A pleasant evening was enjoyed by the telegraphers and their wives present. The evening's entertainment comprised music and singing by the ladies, a speech by Mr. A. F. Childs, and an Irish story by Mr. D. L. Findley, which last caused much merriment. The Sociables will hereafter meet once a week. We believe the unmarried operators are not to be included in these pleasant gatherings; they must either organize a Sociable of their own or get married. This movement among the fraternity shows a friendly disposition, and we hope it may result in much good.

The question of establishing a cable telegraph between New York and the Hague, recently submitted to the Government, has already received consideration, and at the proper time, due acknowledgment will be made to the Netherlands Government for the friendly motives which prompted the concession to an American citizen. Reciprocity, especially as to the terminus, is doubtless the principle which will govern future official proceedings, and it is said the President will, at an early day, call the particular attention of Congress to the subject.

The Western Union Company will open a branch office at the Navy Yard on the first of December.

SPRING.

Changes in Louisville, Ky., Office.

LOUISVILLE, KY., Nov. 22d.

TO THE EDITOR OF THE TELEGRAPHER.

I AM led to write to THE TELEGRAPHER from the fact that no one else seems disposed to give your readers any information of matters and things in general from this vicinity.

In the night force of the Louisville W. U. office an almost total change of operators has occurred in the past few weeks. Mr. Ellis, day chief, resigned, accepting a position on night force at Chicago. Mr. De Bree, formerly night chief, succeeds Mr. Ellis. John Powers, report man, has been appointed night chief. Mr. Grant, of Boston, takes report. Mr. Cattrell has resigned, to go on night at New York. Mr. Netherlands, of Richmond, takes his place. Evarts, lately arrived here, supplies a vacancy from resignation of another of the old force of L. office; Swindel, however, yet remains, sending report south with much felicity. The day force remains substantially as for some time past.

The southern lines have been in rather bad order for a few days past. The weather has made desperate attempts to vie with Proteus in his favorite vocation. It would not be an exaggeration to say that every new hour saw a change in temperature; the characteristic feature, however, has been cold.

Grant, of the auburn *chignon*; Netherlands, the champion smoker; Swindel, the Christian; Powers, of the merry heart; Evarts, physician of the office; all unite in expressions of love to you for that philanthropic agitator, THE TELEGRAPHER, which is received and read with great interest here as elsewhere. E. A. M.

PERSONALS.

Mr. H. S. MASON has been appointed train despatcher on the Western Division of the T. P. and W. R. R., vice R. B. Hubbell, transferred.

Mr. F. S. TOMPKINS has been transferred from the T. P. and W. R. R. shops office to the Peoria (Ill.) depot night office, and it is reported that he will soon follow the excellent example of his partner, B. F. TICHENOR, and take unto himself a helpmeet.

Mr. W. E. CHALLIS has been transferred from the Warsaw night office, on the T. P. and W. R. R., to the agency at Hollis Junction.

Mr. JAMES CHRISTIE, late of the Avenue Drove Yards, Philadelphia, Western Union office, has been appointed night operator at Separation, U. P. R. R. W. T.

Mr. CHAS. W. GOODWYN, late agent and operator U. P. R. R., Creston, W. T., is now sub-editor of the Polk County Times, at Dallas, Oregon.

Mr. JOSEPH BURLEIGH, of Philadelphia, has accepted a position with the Western Union Company at Washington, D. C.

Mr. CHAS. H. HOWARD, formerly operator in the train despatcher office, M. and C. R. R., has been appointed night train despatcher for the same road, with headquarters at Chillicothe, Ohio.

Mr. ED. HAYNES, of M. & C. "Sg." office, Cincinnati, has been transferred to the train despatcher's office at Chillicothe, Ohio.

Mr. C. P. ROSSEAU, formerly of the Trenton, N. J., Western Union office, has been appointed manager of the Newark, N. J., office of the Pacific and Atlantic Company.

THE TELEGRAPH.

The Western Union Dividend.

At a meeting of the Directors of the Western Union Telegraph Company, held at the Executive office, No. 145 Broadway, Wednesday, Dec. 1st, a dividend of two per cent. on the par value of the stock was declared, payable on and after January 20th, 1870.

The transfer books will be closed after business hours on Dec. 20th and be opened again January 21st, 1870.

The British Government and the Telegraph System.

It has been stated that the Post-office authorities will not be in a position to take over the working of the whole of the telegraphs of the United Kingdom on January 1, 1870. We understand that the arrangements for the organization of the new staff, and for the transfer of the business, involving, as they have done, a very great amount of official labor, are so far advanced as to justify the opinion that the business will be taken over on the day named. It is possible, however, that in the case of one or two of the companies some little delay may occur—at the most not more than a few weeks. Temporary arrangements will, if necessary, be made with the existing companies to carry on the business, under the control of the Postmaster-General. The transfer of the telegraphs to the Post-offices in Ireland is to be deferred for a year. For twelve months the business in Ireland will be conducted in the existing offices, but under the control of the Postmaster-General, to whose officers the revenue collected will be handed over.—*European Mail*.

The German American Telegraph.

WE learn, by a letter from our correspondent at Berlin, that the above project, of which we gave our readers some account in our issue of the 30th of October, has entered a new phase and started into life, after having successfully overcome all the difficulties thrown in its way, and made a satisfactory arrangement with the Anglo-American Company for the use of one of its submarine cables. Caution money, to the amount of 500,000 dollars, was deposited on the 12th of November with the General Telegraph Department at Berlin, for the due performance of the stipulations contained in the act of concession, and that city is to be the seat of the board of directors. The new company intend to lay a new land line from Valentia through London to the Norfolk coast, and thence by a submarine cable, at the bottom of the North Sea, to a point on the coast of Germany somewhere near the mouth of the Weser (probably the new naval port of Wilhelmshaven), but which, by the terms of the concession, is to be definitely fixed by Count Bismarck, as Chancellor of the North German Confederation. The service all along the line in Germany, as well as in England and America, will be conducted exclusively by German telegraph clerks and operators.—*European Mail*.

(From the China Telegraph (London), Nov. 15.)

The Indo-European Telegraph Extension and Connections.

THE Indo-European Telegraph Company have now the entire length of their wires completed, with the exception of some trifling links near Teheran. The line runs from Lowestoft by submarine wires to Nordeney, thence to Berlin, Odessa, Warsaw and Kertch to Teheran and Bushire, thence by Persian Gulf cable to Kurrachee. The scale of charges is not yet fixed, but will certainly be lower than the present rates.

The line will probably be opened on the 1st of December.

Telegrams announce the completion of the first section of the new Persian Gulf cable.

Fire Alarm Telegraph.

Report of the Superintendent Toronto Fire Department.

COMPLAINTS continue to be made of the inefficiency of the means of giving alarm on occasions of fire. Because of the frequent ringing of locomotive and other bells, and the great noise and tumult in the streets, the alarm bells are not now as effective for that purpose as formerly. The great distance from many valuable blocks of building to the nearest alarm station, the delay in communicating the alarm to where required to be of service, and then the long distance the engines have to be hauled, leaves it almost certain that whole blocks of buildings might be destroyed before it would be possible for any of the engines to get to the fire. With only two engine stations, and those near the centre of the city, the very best system of fire alarm is a matter of necessity. The Automatic Telegraph Fire Alarm, respecting which a communication from Messrs. Gamewell & Co. was recently laid before the Council, is deserving of the best and most serious consideration as soon as possible. It is probable that, with that system of fire alarm in operation, the two steam engines at present in ordinary use would be more effective for the protection of property in parts of the city distant from the engine stations than four engines would be without it. With the telegraph in operation, several of the expenses connected with the alarm bells at present in use could be dispensed with.

Removal.

WE learn that Mr. J. Earle Howard, the popular ticket agent and telegraph operator at the Railway station in this city, is about to leave in a day or two, having accepted another position on the Fort Wayne, Jackson and Saginaw Railroad. While Mr. Howard's many friends here will be very sorry to part with him, their regrets will be tempered by the knowledge that his removal is in the line of promotion.—*Wolverine Citizen, Flint, Mich.*

Humors of the Telegraph.

A FUNNY little telegraph mistake occurred at Newport, E.y., the other day. A friend in Louisville despatched to another there (so the message read) to "go immediately, and without fail, to Frank Fortky." Knowing no such person, the gentleman consulted the directories of the three cities, but the mysterious Frank was not recorded. He telegraphed back to Louisville, "who and where is Frank Fortky?" and the answer flashed back, "Frankfort, Ky."

An operator at 145 Broadway, N. Y., recently received a message addressed to the "Boston Tripe Foundry."

The following conversation recently occurred between the operator at New Orleans and the operator at Rome, Ga., on the Western Union line:

NEW ORLEANS.—What is the trouble on this wire?

ROME, GA.—Between you and me I think it's a cross.

TELEGRAPHIC BREVITIES.

THE Bank of New Orleans has sued the Western Telegraph Company for \$1,700, the damage sustained by the bank in speculating on a gold despatch, which was in error one cent.

The Franklin line of telegraph at Hartford was seized on Thursday, last week, by the sheriff, on a writ of attachment. The company is sued by a man in Middlesex County for damage done to his wagon and horses, which were frightened by the falling of one of the poles of the company, he becoming entangled in the wires. The suit will be settled in a few days. The company, of course, continues to run as usual.

The City of Fall River, Mass., is about to have introduced the Fire Alarm Telegraph, at a cost of ten thousand dollars.

The storm of November 16th prostrated 116 telegraph poles on the Pacific Railroad, between Pleasant Hill and Sedalia, Missouri.

A grant has been made by the Russian Government to Mr. Tiedyen and others, through whose energy the great Northern cables were laid in the North Sea and Baltic, to lay cables from Posietta Bay, on the southeast coast of Siberia, to China and Japan.

In the Alabama Senate, on Wednesday last, the bill to incorporate the Southern States Telegraph Company was ordered to a third reading.

New Patents.

For the week ending Nov. 30, and each bearing that date.

No. 97,318, antedated November 17, 1869.—TELEGRAPH INSULATOR. Alfred G. Safford, St. Albans, Vt.

I claim extended covering-caps B, in combination with the insulators of air-line telegraphs, when said caps are so formed and secured as to cover and fully enclose the insulators independently thereof, substantially as and for the purpose herein set forth.

Also, a line supporting hook, A, combined with and dependent from a barrel insulator, substantially as and for the purpose herein set forth.

No. 37,374.—SUBMARINE TELEGRAPH CABLE. Moses G. Farmer, Salem, Mass., assignor to the American Compound Telegraph Wire Company, New York city.

I claim, 1. As an article of manufacture, an improved submarine telegraph cable, consisting of a strengthening core, conductor and insulator, surrounded by a jute or hempen buoy, arranged one upon the other, in the order specified.

2. The method of constructing submarine telegraph cables, by winding spirally, about a tenacious steel strengthening core, a ribbon of copper, to form the electrical conductor, and by surrounding the compound metallic wire thus formed with any suitable insulator, and this with some buoyant material, all in the manner specified.

No. 97,392.—INSULATOR FOR TELEGRAPH WIRES. W. D. Guseman and E. C. Bright, Morgantown, West Va.

We claim, 1. The narrow ridge or point in the insulator formed by the grooves, or a groove extending downward from the wire aperture, on which ridge the wire rests, substantially as described.

2. The sloping grooves (one or more in number) extending from the wire aperture, for discharging the water and forming a ridge for the wire to rest on, substantially as described.

3. The insulator A, constructed with the aperture C and slot D, arranged at an angle with each other, as shown, either with or without a cap to protect it from the weather.

Recent British Patents.

Provisional Protection for Six Months.

No. 3,070.—JAMES BUCHANAN, Gatehead on Tyne. Improvement in apparatus for coiling electric telegraph cables or ropes.

No. 3,082.—FRANCIS WOODWARD, Worcester. Improvements in apparatus for signalling and communicating on railway trains.

No. 3,022.—JOHN MATTHIAS AUGUSTUS STROH, 23 Tolmers Square, Hampstead road. Improvements in electro-magnetic clocks, parts of which improvements are applicable to mechanical clocks.

MARRIED.

HARRIS—WATT.—At the residence of the bride's father, Mr. FRANK HARRIS, of the M. & C. Telegraph Superintendent's office, Cincinnati, O., to Miss MAGGIE WATT, of Chillicothe, O.

PALMER—PARSONS.—At Beekmantown, N. Y., Nov. 25th, by the Rev. A. WITHERSPOON, Mr. CHARLES L. PALMER, manager of the Montreal Telegraph office at Clintonville, N. Y., to Miss Mary A. PARSONS, formerly operator at Plattsburg, N. Y.

DIED.

MOORE.—At St. Augustine, Florida, Nov. 16, Mr. E. S. MOORE, manager of the International Ocean Telegraph Company's office in that place.



SATURDAY, DECEMBER 4, 1869.

J. N. ASHLEY.....Publisher and Editor.

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NATIONAL TELEGRAPHIC UNION.

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THE RAPID EXTENSION OF THE TELEGRAPH.

NEVER, since the first introduction of the telegraph, has its extension been so rapid and general as at present. The success which has attended the laying and working of submarine telegraphs has resulted in the inauguration of enterprises intended to connect the most distant countries and localities, and within a few years—we might almost say within a few months—the entire civilized world will be in practically instantaneous communication with each other, and with the great political, financial and commercial centres. Our readers are almost weekly informed, through the columns of THE TELEGRAPHER, of new and promising enterprises for the accomplishment of this desirable and now necessary intercommunication. Cables are now about being laid, or in process of manufacture, for the purpose of establishing telegraphic communication over most of the important routes, and the year 1870 will witness an increase and extent of telegraphic facilities which the most sanguine anticipations of those whose faith in the system was superior to temporary resources, would a few years since have hardly deemed probable.

India, Australia, China, Japan, Turkey, and other countries are about to enter, or have recently entered the telegraphic community. The Great Eastern, which failed to realize the expectations of those by whom it was built, has proved to be the desideratum in the laying of great telegraph cables, and finds full, and, we presume, profitable employment in this work.

The increase and extension of land lines is scarcely less remarkable. In all countries where the telegraph system has been established the lines are being extended in all directions, and in many the cost of telegraphing is being reduced, to bring the telegraph into constant and customary use by the people.

In Great Britain, the Government, which has, unwisely we think, taken possession of the telegraph, preparations are being made to extend the wires to localities not hitherto reached, and to largely increase the number of offices. In France, where, the Government being despotic, all means of communication are necessarily under the control of the authorities, considerable extensions of the lines and a large reduction of the expense have recently been made. In other European countries, although the progress of the telegraph is less rapid, it still does progress, and daily becomes more and more a necessity of the business community and the general public.

In Central and South America telegraph lines are being more generally constructed, and as the people of those countries become accustomed to their use their patronage will increase. The West India Islands are about to be connected by cables with each other, and,

through the International Ocean Telegraph cables from Havana, with the United States and the telegraph systems of the world.

Our space is too limited to detail all that is being done throughout the world, but our readers are so fully informed in regard to these various enterprises as they arise that this general summary will suffice.

In another direction the telegraph is being wonderfully developed. We refer to its employment for local and individual purposes. In this city there are not less than seven hundred instruments used for reporting the quotations of the gold and stock exchanges, and their number is being rapidly increased. Only the present week a new enterprise of this kind, intended to report gold and exchange quotations, for the use of merchants and others, entitled "The Financial and Commercial Telegraph," has commenced operations, with the most flattering prospects of success. Besides these there are in operation a large number of private lines, connecting offices and factories, some of which are of many miles length. One firm, having offices in this city and Philadelphia, has a wire between the two cities, exclusively for the transaction of its own business.

The Metropolitan Telegraph Company, whose advertisement appears in our columns, proposes to establish a local telegraph system in this city, on a scale never before attempted in this country, and on a system which it is believed will insure its success practically and pecuniarily. In other large cities many local lines are in operation, and others are about to be built. It would almost seem as if an exclusive telegraph line was becoming a necessity for any business house whose transactions are upon an extensive scale.

The effect of the telegraph upon business and social affairs, already developed, cannot be overestimated; it has completely changed the old modes of doing business, and has enormously increased the amount of business which may be done within a given time. Great negotiations and transactions, which formerly occupied weeks and months to accomplish, are now completed in a few hours or days, and the parties interested are thus enabled to devote the time and capital saved to new enterprises. But, wonderful as has been the results thus far realized, they will unquestionably be eclipsed in the further development of the telegraph. What has been in this respect is but an indication of what will be.

In addition to the effects above indicated the world will be enlightened through the medium of the telegraph, and the nations, thus brought into intimate communication with each other, will become but parts of one great community, whose interests shall be so interwoven that eventually wars will cease, and political as well as social and business problems and differences will be so quickly solved and explained, that no excuse will remain for any ruler or nation to resort to the barbarous arbitrament of force.

Electricity and steam are the great civilizing agencies, and daily become more powerful for the accomplishment of their great mission—the practical establishment of a universal brotherhood of mankind, and the inauguration of that time when the "lion shall lie down with the lamb" and "the nations shall learn war no more."

"Modern Practice of the Electric Telegraph" Translated into Spanish.

As will be seen by the following complimentary article, translated from the *Revista de Telegrafos*, of Madrid, Spain, Mr. POPE's excellent work on the *Modern Practice of the Electric Telegraph* is being translated into the Spanish language, and is to be republished in Spain and Cuba. It thus appears that the merits of this work (which no telegrapher can afford to be without) is securing practical recognition abroad, and giving its talented author an enviable reputation as a writer upon practical and scientific telegraphy.

We believe this is the first instance of a telegraphic

work being translated from the language in which it was originally written to another.

"There has recently been published in the United States an excellent work on telegraphing, which reviews, in a clear and comprehensive manner, all the later improvements in the practice of the science. It is entitled "The Modern Practice of the Electric Telegraph," and its author is Mr. FRANK L. POPE. His name is a guarantee of the value of the work, which, on account of its peculiar merits, will take the first rank among the illustrations of this branch of knowledge. A translation of the work into the Spanish language is now in progress, under the hand of a competent gentleman—a member of the Telegraphic Corps in Cuba. The new volume will be illustrated with engravings made in North America, which will ensure their correctness and excellence of finish. We hope soon to publish a more extended and critical review of Mr. POPE's work; meanwhile, we recommend our readers to send us their orders for the book, which we will undertake to forward to Havana by the first mail. Price: paper, \$2, cloth, \$2.50."

Report of Prof. Morse on the French Industrial Exposition.

We have received from a friend in Washington a copy of the Report of Prof. MORSE, as United States Commissioner to the late French Universal Industrial Exposition, on Telegraph Apparatus and Processes.

Prof. MORSE has made a very able and interesting report, containing much valuable information. We shall shortly publish a somewhat extended review of the report.

Packard's Monthly.

We have received the December number of this popular monthly, which will complete the second volume of the work.

The January number will appear enlarged and greatly improved, making it one of the handsomest, as it is already one of the best of the monthlies. The price is necessarily increased to two dollars, but this will prove satisfactory rather than otherwise to the subscribers, as, even at that rate, they will receive more than the value of their money.

C. Westbrook & Co.

We take pleasure in calling attention to the advertisement in this paper of C. WESTBROOK & Co., successors to JAMES J. CLARK, at Harrisburg, Pa., as manufacturers of telegraph instruments and supplies. Mr. WESTBROOK's reputation as an electrician, and the excellent mechanical talent comprised in the new firm, will insure satisfaction to all who may patronize them.

Obituary.

We have received the sad information of the death of Mr. E. S. MORSE, at St. Augustine, Florida, where he had resided for some time as manager of the office of the International Ocean Telegraph Company. Mr. MORSE was highly esteemed by his employees, and greatly beloved by his associates on the line, and his death is regretted by all who knew him.

Absurd Ignorance.

THE London Times, of October 12, in an article on the recent gold excitement in this city, has the following allusion to the ridiculous story that the rapid working of the gold reporting telegraph heated the wires red hot and melted some of them:

"How many fortunes must again and again have been made and marred during the few business hours in those three eventful days; what hot and cold fits of frantic joy and mute despair must alternately have passed upon all those engaged in that terrible game; what the stormy passions must have been to which the whole town and country became a prey, as the tidings of those sudden ups and downs followed so closely upon each other as to melt the telegraph wires, and break up the communication between the Exchange and the banking houses in the city."

This absurd statement, made in a city paper at the time, seems to have been credited by the editor of the Times, with a simplicity and ignorance which is positively charming.

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The Company will also be prepared to furnish private wires for connecting warehouses with manufactories, and dwellings with offices, with suitable instruments, at reasonable rates.

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FIRE ALARM TELEGRAPH

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Any information desired in regard to the above system will be cheerfully and promptly furnished upon application at the office.

A pamphlet, setting forth more fully its advantages and superiority, has been printed, and will be supplied to Municipal Authorities and others interested in Fire Alarm and Police Telegraphy, upon application as above.

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INSULATED WIRES,

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EXTENSIVE MANUFACTORY in NEW YORK,

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MODERN PRACTICE OF THE

ELECTRIC TELEGRAPH.

By FRANK L. POPE.

PRICE.....\$1 50.

We will furnish the above work, together with Prof. J. E. SMITH'S MANUAL OF TELEGRAPHY, upon receipt of the price of the former

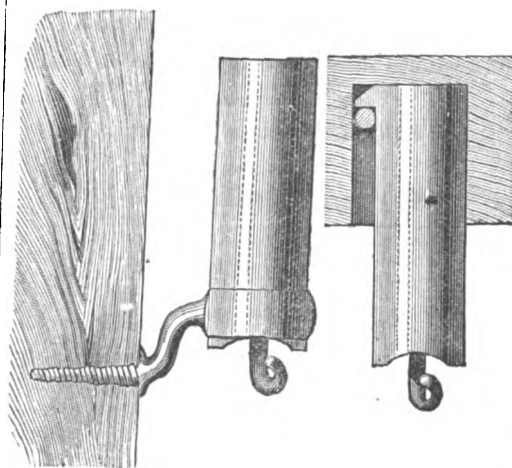
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Also, PLAIN, WOVEN, BRAIDED, ENAMELLED, SHELLACED, PARAFFINED, and all kinds of

TELEGRAPH OFFICE WIRES,

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Would caution Telegraph Companies who want our well-known Premium Registers, with all our various improvements upon them, that there is a very good imitation (in appearance only), but none genuine unless they have our names and number upon them.

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(Adjoining the American House.)

They manufacture Electric and other Fine Machinery to order. Their Special Inventions are:

The Electro-Magnetic Watch Clock, which is the best Watchman's time recorder in the world.

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which is much RICHER AND FINER than brass, he now presents his work in a style and of a quality that are unsurpassed. His relays were awarded the

FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionally stronger magnet, while the resistance will be the same.

He is also manufacturing the

IMPROVED BUTTON REPEATER,

the cheapest, most reliable and simple repeater as yet invented

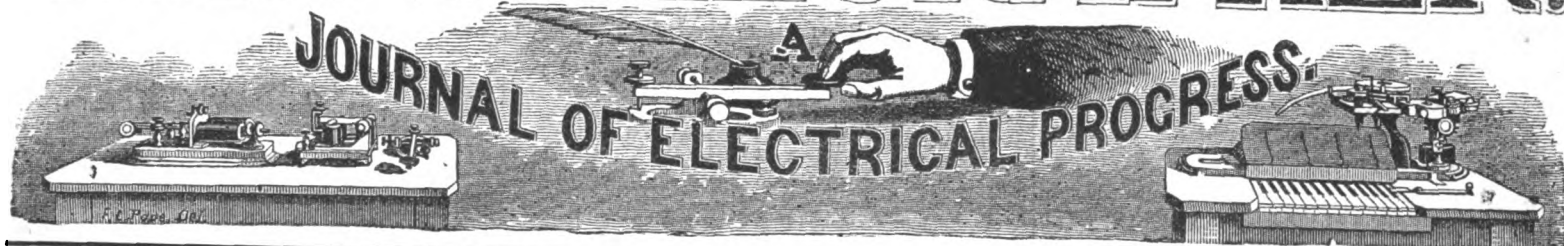
PRICES.

Button Repeaters.....	\$6 00
Relays, with helices in bone rubber cylinders (very fine).....	19 50
Small Box Relays.....	16 00
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Main Sounders, some as the above, with heavy armature levers without local connections, 75 cents less.	
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All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package. He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

J. N. ASHLEY,
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(P. O. Box 6010.)

THE TELEGRAPHY.



Vol. VI.—No. 16.

New York, Saturday, December 11, 1869.

Whole No. 178.

LITERATURE.

PARIS UNIVERSAL EXPOSITION, 1867.

Examination of the Telegraphic Apparatus and the Processes of Telegraphy, by SAMUEL F. B. MORSE, U. S. Commissioner. Washington, D. C.: Government Printing Office, 1869.

I.

At the time of the great Universal Exposition, which was held in Paris in the summer of 1867, the United States Government appointed the venerable Prof. Morse as commissioner to examine the telegraphic apparatus there exhibited. His report, which has been nearly two years in course of preparation, has but just been issued from the Government printing office at Washington. It forms a volume of 166 large pages, elegantly and carefully printed, and containing a number of illustrations.

The author has evidently expended a large amount of labor and research in the preparation of this report, and has brought together a mass of material—especially in the form of statistics relating to the telegraphic service in foreign countries—which is not only new, but extremely interesting and valuable. We propose to notice, as far as practicable, in the limited space at our command, some of the more interesting features of the report.

Prof. Morse commences by classifying the different systems employed for communicating intelligence at a distance into *semaphores* and *telegraphs*—the former term being applied by him to those forms of apparatus which convey merely an evanescent signal to the eye or ear, or both, while the latter term is confined strictly to the different varieties of recording apparatus. Being undoubtedly the inventor of the first practical recording telegraph, it is not surprising that Prof. Morse should insist on this distinction with considerable earnestness, and it must be admitted that his arguments upon this point are not only just but conclusive. After giving a brief *resumé* of the results of the labors of the earlier discoverers and experimenters, the author proceeds to analyze and describe the system invented by himself, now universally known as the Morse recording telegraph. The different modifications of the apparatus which are employed in Europe, and which were shown at the Exposition, are described and illustrated. Most of these may be found in the recent edition of Sabine's work. The most interesting of these is the Digney ink writer, which has achieved a wide and deserved popularity in all parts of Europe, and is considered by Prof. Morse himself as a "real improvement."

Under the head of printing instruments we are given a full description of both the Hughes and Arlincourt printers, with illustrative engravings. A number of other printers are in the catalogue, but no facilities for their examination were afforded to the commissioner, and therefore no satisfactory description of them could be given. The Bonelli-Cook instrument (an electro-chemical printer), together with Caselli's pantelegraph, and Lenoir's electrograph, are also referred to, but no detailed descriptions are given. The two last mentioned are both *fac-simile* telegraphs.

The chapter devoted to semaphores mentions a number of dial instruments—which, by the way, appear to find quite extensive employment in Europe—and also includes under this head the different sounders or acoustic instruments. One of Judge Caton's well known pocket field telegraph instruments was on exhibition, and appears to have attracted considerable attention.

It has been generally supposed, and in fact the statement has been published in most of the existing works on the telegraph, that the discovery of the art of reading from the Morse instrument by sound originated with the operators themselves, some time subsequent to the general introduction of the telegraph as a means of communi-

cation, but Prof. Morse himself claims that honor in the present work, as will be seen by the following extract:

"The first acoustic semaphore using the Morse code was the original recording instrument shown by the writer in 1835, at which time this acoustic peculiarity was not only noticed, but was then made known to others, and was considered of sufficient importance to be secured by letters patent, drawn up in 1837. The claim therein is for a mode of communicating intelligence 'by signs or sounds, or either.'"

Sir Charles Bright's sounder, which consists of two bells of different tones, one of which is placed on each side of the operator, and actuated respectively by positive and negative currents upon a single wire, is, as Professor Morse justly remarks, theoretically the perfection of the sounder. "In view, however, of the skill and ability displayed by the American operators in their results, in speedy transmission with the Morse sounder, it is difficult to conceive that practically any improvement in it could be made. Yet, as there is theoretically an economy of time in Sir Charles Bright's modification, it may prove to be practically, as well as theoretically, better."

The chapter relating to codes, or conventional alphabets, adapted to the Morse system, gives in a tabular form the original arrangement of Prof. Morse, which is at the present time exclusively used in America, and also the modifications which it has undergone in the formation of what is now known as the international alphabet, and has been adopted in all parts of the world excepting North America. Referring to these modifications, Prof. Morse says:

"The space letters were very early found in practice to have the inconvenience of being confounded with other letters. * * But after the introduction of the alphabet into practical use it became next to impossible to make the desired change, which was attempted by the inventor even on the first public line, so it was reluctantly suffered to exist. Notwithstanding the defect has always been acknowledged by the inventor, and the substitution of other combinations for the space letters often proposed, yet so soon as the first operators had acquired the practical use of the original code the change seemed hopeless."

It is greatly to be deplored that this change was not made in the infancy of the system, for it would probably be impossible to effect it at this late day.

The international code has reached this continent, through its employment upon the Anglo-American and French cables, and is already finding favor among the operators upon the American land lines connecting with them. Still, as Prof. Morse remarks, "it is a question for international settlement whether it is not better to suffer a little inconvenience, from an acknowledged imperfection, than to attempt a remedy which must necessarily give annoyance to thousands."

For the benefit of those not familiar with the international code, it may be briefly stated that it contains no space letters nor dashes of varying length. The numerals are each composed of five elements, symmetrically arranged, so that the last half of the character forms a check for the first half, which greatly reduces the chances of error in reading them.

Prof. Morse proposes a still further amendment in the code, by employing certain letters and combinations of letters, as signs of punctuation, etc., instead of the somewhat unwieldy combinations now in use, but it seems to us that the danger of confusion arising from careless manipulation would be considerable in case this change were made, while but little time would be saved. American operators are accustomed to punctuate by varying the spaces between the words, making comparatively little use of the official code signs, and the length of the latter, therefore, is a matter of less consequence.

Under the general head of "Batteries, Conductors and Insulators," a number of comparatively recent improvements are very fully and clearly described, among which are Farmer's thermo-electric battery, Ladd's dynamo-electric apparatus, the American compound wire, and Day's kerite insulation for wires and cable. The articles

upon the two last mentioned inventions, especially, are of permanent interest and value. In speaking of the well known Brooks insulator, the author remarks that, "in conversation with some of the jurors at the Exhibition, this insulator was spoken of as being the best that had been submitted to them." An interesting description is given of a new apparatus for deep sea sounding, invented by Messrs. S. E. & G. L. Morse, of New York, which, from its convenience of use, and its accurate results, seems destined to play an important part in making the preliminary surveys of the ocean's bottom for future submarine cables. An improved plan for laying cables, proposed by the same gentlemen, is given *in extenso*—the principle object of which is to render their repair more easy and certain in case of damage.

A chapter upon automatic telegraphy refers to nearly all the devices which have been used for this purpose, from Prof. Morse's original type and port-rule arrangement down to the elaborate apparatus of Wheatstone and Siemens-Halske. A detailed review of the results which have been attained in practice by the different instruments is given at the end of this chapter, which possesses considerable interest and value, especially at the present time. The general conclusion arrived at by the author is that no economy in time, or expense of transmission, can be attained by any process of this kind hitherto in use, which is undoubtedly substantially correct. There is no doubt, however, that an equal amount of work may be done on a much smaller number of wires by means of these instruments. The telegraph of the future will unquestionably be entirely automatic in its action, but it hardly seems possible that any system involving a translation of the despatch into arbitrary characters, and a re-translation into the vernacular, can ever to any extent supersede the present system, which has been brought to such perfection by the unequalled skill of the American operators.

Electric Spiritualism.

THE London correspondent of the *New York Tribune* writes, in a recent letter, that "A contribution to the literature of Spiritualism is made this week in a published letter from Mr. Faulkner, Philosophical Instrument Maker, No. 40 Endell street, London. Mr. Faulkner writes that for many years he has had a large sale for spirit-rapping magnets and batteries, expressly made for concealment under the floor, in cupboards, under tables, and even for the interior of the centre support of large round tables and boxes; that he has supplied to the same parties quantities of prepared wire, to be placed under the carpets and oil cloth, or under the wainscot and gilt beading around ceilings and rooms—in fact, for every conceivable place; that all these obviously were used for spirit rapping, and the connection to each rapper and battery was to be made by means of a small button, like those used for telegraphic bell ringing purposes, or by means of a brass headed or other nail under the carpet, of particular patterns known to the spiritualists. He describes these rappers as 'calculated to mislead the most wary,' and adds that there are spirit rapping magnets and batteries constructed expressly for the pocket, which will rap at any part of the room. He has also made drums and bells which will beat and ring at command; but these two latter are not so frequently used as the magnets are, because they are too easily detected."

"Mr. Faulkner ought to have completed his interesting statement by telling us to whom his instruments were sold, but it is not bad as it stands. Possibly his letter will stimulate the instrument makers to the spiritualists in America to make an equally clean breast of it."

The Franklin Telegraph office at Meriden, Conn., was destroyed by fire Friday morning, Dec. 3d.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, Dec. 9th.

TO THE EDITOR OF THE TELEGRAPHER.

THE long vacation is over, and Congressmen and correspondents are again at the national capital, prepared to resume their duties and labors.

Congress as yet is hardly fully organized and under way, and consequently telegraph matters have as yet received but little if any attention. The *Chronicle*, of this city, which is notorious as a lobby organ, has sounded the key note, and we may expect very shortly that the schemers will be here, prepared to advance their pet projects by any means in their power.

The *Chronicle* refers to the starvation rates adopted by the Western Union Company to *burn* the Pacific and Atlantic Company, on territory covered by its lines, as a confession that charges are exorbitant. When competing railroads transport freight hundreds of miles for less than the cost of loading and unloading it, is that an acknowledgment that paying rates are exorbitant and unreasonable? The cases are precisely parallel.

The only telegraphic matters of interest before Congress this week have been the President's statement, in his message delivered on Monday last, relative to the French Cable, and the diplomatic correspondence communicated by him to the Senate relative to ocean cables.

In his message the President says:

It having come to my knowledge that a corporate company, organized under British laws, proposed to land upon the shores of the United States, and to operate there a submarine cable, under a concession from his Majesty, the Emperor of the French, of an exclusive right for twenty years of telegraphic communication between the shores of France and the United States, with the very objectionable feature of subjecting all messages conveyed thereby to the scrutiny and control of the French Government, I caused the French and British Legations at Washington to be made acquainted with the probable policy of Congress on the subject, as foreshadowed by the bill which passed the Senate in March last. This drew from the representatives of the company an agreement to accept as the basis of their operations the provisions of that bill, or of such other enactment on the subject as might be passed during the approaching session of Congress; also, to use their influence to secure from the French Government a modification of their concession, so as to permit the landing of any cable belonging to any company incorporated by the authority of the United States, or of any State of the Union, and on their part not to oppose the establishment of any such cable. In consideration of this agreement I directed the withdrawal of all opposition by the United States authorities to the landing of the cable, and to the working of it until the meeting of Congress. I regret to say that there has been no modification made in the company's concession; nor, so far as I can learn, have they attempted to secure one. Their concession excludes the capital and the citizens of the United States from competition upon the shores of France. I recommend legislation to protect the rights of citizens of the United States as well as the dignity and sovereignty of the nation against such an assumption. I shall also endeavor to secure, by negotiation, an abandonment of the principle of monopolies in ocean telegraphic cables. Copies of the correspondence is herewith furnished.

The views of the President on this subject are reasonable, and his recommendations just and proper, and such as not even the managers of the French Cable Company or others can object to.

The diplomatic correspondence relative to ocean cables is interesting, but your limits will only permit a very brief synopsis.

Minister Washburne writes to the Secretary of State from Paris, Oct. 5th, that the French Government receives favorably the proposition to conclude the telegraphic convention between France and the United States.

On the 23d of November Secretary Fish transmitted to all our ministers a letter, in which he says the President desires to conclude the convention on a basis of security to the cable lines in time of peace or war against wilful or wanton destruction or injury, by declaring that such acts shall be deemed acts of piracy, and so punished; also, a suitable provision to encourage the future construction of ocean lines, and that, hereafter, no exclusive concessions shall be made without the joint action of the two governments, whose shores are to be connected. The scrutiny of messages by government officials in favor of controlling either end of the cable, is, in the opinion of the President, calculated to lead to trouble, therefore he proposes to have a provision against it. The President desires that the representatives at Washington of Great Britain, France, Portugal, Spain, Italy, North Germany, Austria, Belgium, Holland, Sweden, Norway, Denmark, Turkey, Greece, Venezuela, Brazil, the Argentine Confederation, Colombia, Bolivia, Peru, Ecuador, Mexico and Chili, may be empowered to enter jointly and severally into negotiations with the United States and each other, with a view of concluding a joint convention for the purpose of establishing cable lines between the United States and those countries. It will be understood, however, that this project be submitted simply as a basis for future discussion, should the leading powers concur with the United States in considering this subject one for international consideration and jurisdiction.

There is no doubt but that this whole matter of ocean telegraphy, as concerns international interests, will be finally settled amicably through the efforts of our govern-

ment, and placed under such regulations as shall prevent any future misunderstanding or difficulty, and promote the interests of the proprietors of such enterprises.

On Wednesday a petition was presented in the Senate from one Jewett, asking Congress, as the means of vindicating the dignity and sovereignty of the nation (of which the said Jewett is the custodian and guardian, as the grantee of another cable concession which he is trying to utilize and make profitable), to suspend the working of the French Cable on American soil until France authorizes the landing of a cable from America on French soil, and guarantees that all American despatches shall freely pass over France through the hands of American agents.

Mr. Sumner remarked that there was now a bill upon the table of the Senate which met the prayer of the petitioner, and he proposed calling it up at an early day.

This movement of Jewett opens up the French Cable controversy again, but, pending the negotiation of a cable treaty with the French Government, it is hardly probable that any decisive and final legislation on the subject can be forced through Congress. CAPITOL.

Enlarged and Improved Accommodations.

BOSTON, Dec. 5th.

TO THE EDITOR OF THE TELEGRAPHER.

THE past week has been one of interest to the employees of the Western Union Company in this city. We have just removed from our dark, ill-ventilated and gloomy quarters to a large and pleasant room on the fourth floor of the same building, just fitted up for the operating room.

The first floor has been fitted up in a very tasty manner for the use of the clerical and delivery departments, and an elegant black walnut counter or receiving desk greets the eye as you enter from State street. The familiar countenances of Messrs. Crook, Martin and Sugerhues preside at this counter. This room is connected to the operating department by means of a pneumatic tube, for the transmission of despatches to and from the two departments.

Proceeding upward two flights we reach the floor on which is the office of the Associated Press and the operating room of the ladies' department, both very pleasantly located. At the head of the fourth and last flight we reach the new operating room, which is in itself a model of beauty. It is about seventy-five feet deep, well lighted and ventilated, and excellently arranged. The operating tables are eight in number, each one divided into four sections, separated by rough plate glass.

The switch (the same one as in the old office) is situated a few feet from the wall, nearly opposite the entrance to the room, and the combination instruments, two in number, just to the left as you enter.

The whole office, with all its paraphernalia, was removed in one night, without interruption to the working of the circuits. For this and the general arrangement of the office too much praise cannot be bestowed on the manager, Mr. Milliken.

On the whole we are highly pleased with our new office. It is both roomy and pleasant, and a great improvement upon our old dingy quarters. Having labored for years to better it, we feel highly elated at our success, and we return our thanks to those who worked so zealously in our behalf to this end.

BOSTON OPERATORS.

Telegraph Matters at the Capital.—The Great Burd under a Table.

WASHINGTON, D. C., Dec. 8th.

TO THE EDITOR OF THE TELEGRAPHER.

THE meeting of Congress, on Monday last, is the great event of the season here, and of especial interest to the telegraph companies having offices here, as it is the commencement of their harvest at the national capital. The Western Union, Bankers and Brokers' and Franklin lines each have wires to the capital, and were ready for business, and were all crowded with business on that day.

The Telegraphers' Sociable met at Mr. H. H. Bishop's house on the evening of Dec. 2d, and had a very pleasant time. The evening was enlivened with excellent music, readings, etc. It is understood that the unmarried operators are hereafter to be allowed to participate in these pleasant gatherings—a favor which will be appreciated by the unfortunates who have not yet experienced the pleasures and trials of married life.

The past ten days has experienced many changes, new arrivals, etc., among the telegraphers. The Bankers and Brokers' Company has opened a branch office at the Seaton House, which is in charge of Mr. R. H. Mattingly; also a branch in the Arlington House, with Mr. Eugene Adams in charge.

On the first inst. the Western Union Co. opened a

branch office at the Navy Yard, with Mr. C. Wells in charge.

Mr. Buck Leaf, a well known lineman, has been here for several days past, assisting the Franklin Company in putting things in order for the meeting of Congress.

Mr. C. H. Burd, the original Boston "Chawles," has been operating around the capitol, getting things started for the Franklin line. When Congress commenced its session, on Monday, "Chawles" was in trouble, and it was the Franklin line; there was a cross, and "Chawles" could not find it. He looked as if his last day had come, his appearance differing from that presented at the time of the strike on the Franklin line, when he was imitating Don Quixote's celebrated fight with the windmills, and was white with rage. On Monday he was red with excitement and over-exertion to find a cross under the table when it was a mile from the office. Had it not been for a Western Union line man accidentally discovering and taking out the trouble, "Chawles" might have been hunting for it under the table yet. SPRING.

The War Cloud on the Horizon.

NEW YORK, Dec. 7th.

TO THE EDITOR OF THE TELEGRAPHER.

I REGRET to see that the Pacific and Atlantic Telegraph Company, which has hitherto proved itself the most ably managed of all the competing companies, has fallen into the fatal error of commencing the "cut-throat policy" of reducing tariffs, which has proved so disastrous to telegraph stockholders and telegraph operators a number of times in the previous history of the business. The tariffs between the important business centres were by no means exorbitant before the reduction by the Pacific and Atlantic. The public were not dissatisfied with the reasonable and remunerative rates previously existing, and have not asked for this reduction. What they do ask is to have their business done with despatch and accuracy. There are fifty customers complaining of delays and errors to one complaining of the rates. The true policy of competition, except in cases where the rates are exorbitant, is to hurry up the business.

The war has now commenced in earnest. The Western Union has accepted the challenge, and put the rates to all points reached by the P. & A. lines at a figure which cannot possibly pay expenses.

Now mark my prediction, when I assert that the next move in this ruinous and uncalled for competition will be the robbery of the hard-worked operators to pay the expenses of the campaign. A general reduction of rates will be attempted within two months. The idea that low rates increase business to any perceptible extent is known by every telegrapher of experience to be an utter fallacy. Therefore, the receipts will fall off, and, to make matters worse, the companies will make the operators suffer.

I call on every operator who reads THE TELEGRAPHER if this thing is attempted to resist it to the death. If the companies want to fight let them pay the expenses themselves. When they find that they cannot shift them on the employees they will soon come to terms. Let every operator who reads these lines get ready to make a stand; he will be called on for his "war tax" before many weeks. As for me, I don't propose to pay it. If the company work for cannot afford to pay me what they contracted to when I entered their employment, they can put the rates back again. I object to being robbed by a soulless corporation for the supposed benefit of the public generally, at least until such public shall have manifested desire to have it done, and I hope my fellow laborers will view the thing in the same light. I am a believer in competition, but I like to see it carried on in a legitimate manner, by superior business management and expert operating, and not by the cheap clap-net of "reduced rates."

ONE OF THE RANK AND FILE.

Don't Like It!

PHILADELPHIA, Dec. 7th.

TO THE EDITOR OF THE TELEGRAPHER.

I LEARN to-day that the Bankers and Brokers' Company have resolved to cut down the salaries of all of their employees ten per cent., in consequence of the threatened reduction of rates, resulting from the competition of rival companies. If the employees of this company, or any other, allow their pockets to be picked without remonstrance, they pay the expenses of these telegraphic "wars of extermination," they show themselves less than men, and deserve to be promoted into the messenger's department. If they will mutually agree not to submit to any such swindle, and stick to their determination, they can put an end to this humbug at once. I shall do all I can to resist it, and hope the rest will. SECTER.

TO CORRESPONDENTS.

SEVERAL interesting communications, necessarily omitted this week, will appear next week.

PERSONALS.

Mr. CHARLES E. BROWNE, formerly of San Francisco, but more recently of the Western Union New York office, has been appointed Manager of the Atlantic and Pacific Company's office at Syracuse, N. Y., vice D. R. SAFFORD resigned, to engage in other business. This is an excellent appointment.

Mr. E. S. WATTS, operator in Evansville, Wis., office, resigned Nov. 30th, to take a situation in a counting-house at Louisville, Ky.

Mr. C. L. MIXER, formerly of the C. B. & Q. R. R. telegraph office at Chicago, Ill., takes the position resigned by Mr. WATTS at Evansville, Wis.

Mr. JOE HURLEY, of the Caledonia Springs Montreal Company's office, has accepted a position with the day force, Ottawa office, same company.

Mr. J. R. BATTLE has been transferred from the Russell House, Ottawa office, to the main office, same place.

Mr. TOM DUNLOP has been appointed Assistant Manager, in Pembroke, Ontario, office.

Mr. J. K. WEBBER, night operator, Tama, Iowa, has resigned, to engage in other business.

Mr. F. R. DEWEY, operator from the L. S. and M. S. R. R. telegraph, fills the vacancy of J. K. WEBBER.

Messrs. T. J. HEWLETT, R. D. WILLIAMS and PUTNAM, of the Franklin Company's N. Y. office, have been transferred to Washington, D. C.

Mr. J. B. TEAKLE, of New York, is in Washington, D. C., on business for the French Cable Company.

Mr. G. C. MAYNARD has been appointed Manager of the Western Union offices at the capitol, Washington, D. C.

Messrs. W. W. THWEATT, E. C. STEWART, F. C. LOOMIS and GEORGE SHIVLER, are assigned to duty in the Western Union capitol offices, at Washington, D. C.

Mr. T. FULTON, of New York, printing operator, has taken a position in the Western Union, Washington, D. C., office.

Mr. BURLEIGH, of Philadelphia, Pa., has accepted a position with the Western Union Company at Washington, D. C.

Mr. HALLEY has charge of the Kirkwood House Western Union, office at Washington, D. C.

Mr. JOSEPH A. KIRBY has charge of the Western Union office on the Senate side of the Capitol at Washington, D. C.

Mr. FRANK A. LAPHAM, formerly of Altoona, Pa., has accepted a position in the Western Union office, at 432 Pennsylvania avenue.

THE TELEGRAPH.

By Atlantic Cable.

The French Cable.

PARIS, Dec. 3d.—It is reported that the difficulties at Paris and Washington, arising from the landing of the French cable on American shores, have been amicably settled.

LONDON, Dec. 7th.—An English Company is being formed to complete telegraphic communication between England and China, by way of India, and extend it to Australia by means of submarine cables.

[NOTE.—This is doubtless the project of which some details were printed in THE TELEGRAPHER of Nov. 27th, under the heading of *Telegraphic Connection of London and Australia*.—ED. TELEGRAPHER.]

ST. PETERSBURG, Dec. 7th.—The Czar has granted a concession for the formation of a company, with the right to lay a submarine telegraph cable or cables from some point on the coast of Asiatic Russia, to establish telegraphic communication with China and Japan, the consent of the authorities of those countries having first been obtained.

International Ocean Telegraph Company.

THE annual election of directors of the International Ocean Telegraph Company, for the ensuing year, was held at the office of the company, No. 86 Liberty street, Tuesday, December 8th, when the following gentlemen were elected:

Messrs. Wm. F. Smith, J. T. Sanford, Alex. Hamilton, Jr., E. S. Sanford, David H. Haight, Robert J. Livingston, J. A. Scrymser, O. K. King, Wm. G. Fargo.

At a meeting of the directors, held on Wednesday, the following were elected officers of the company for the ensuing year:

Gen. Wm. F. Smith, President; J. T. Sanford, Vice-President; Charles A. Scrymser, Secretary; and Thomas F. Hudson, Treasurer.

Telegraphers' Mutual Insurance Association.

THE report of the treasurer of the Telegraphers' Mutual Insurance Association shows that during the past year the association has nearly doubled its membership. Since the organization there have been ten deaths. The first payment on account of death was \$278, and the last \$561. During the past year forty-four members have failed to respond to assessments, and thus forfeited their membership. The total payment (including amount due on account of the death of a member) is about \$4,000. The expenses for the two years have been \$102, and there remains in the treasury, to the credit of expense account, \$126.04.

The applications are principally from New York and the South and West—New England telegraphers, as usual, contributing but little to the aggregate, having not more than twenty-five names on the roll.

Mississippi Division P. & A. Co.

Mr. CHARLES H. HASKINS, Superintendent of the Mississippi Division of the Pacific and Atlantic Telegraph Company, has moved his headquarters from St. Louis, Mo., to Chicago, Ill., where he may be found at No. 91 South Clark street.

A Chicago correspondent writes us:

"The telegraph business is lively here. The Western Union is exercised at the advent of the 'Young Giant' (as it is termed by its friends there)—the Pacific and Atlantic Company—and, as the company has come to stay, the Western Union compliments it by showing fight strong; but it would be well for the managers of the Western Union to recollect that the battle is not always favorable to the strong nor the race to the swift. The public shows its appreciation of the situation by hurrahing for the P. & A. and competition generally.

Sailed for Europe.

Mr. WILLIAM ORTON, President of the Western Union Telegraph Company, sailed in the steamship Scotia for Liverpool, on Wednesday last. Mr. Orton's labors as the chief executive of the Western Union Co. have been very onerous and exhausting, and rest and recreation will doubtless prove advantageous to him. A party of Mr. Orton's friends had made arrangements to accompany him down the bay, but, to save the tide, the Scotia was obliged to sail too early to permit the demonstration.

Sensible and True.

WE notice that out West the Western Union Telegraph Company advertises that it has reduced its rates "about thirty-three, and in many cases fifty per cent. below the tariff recently announced by competing companies," that is, to points reached by the competing lines. This is too much of a good thing, altogether. It can't last, and isn't intended to. It is the old trick of monopolies to crush out opposition; but we hope the public will not be green enough to be caught by the glittering chaff. In all such cases the duty of the people manifestly is to carry their patronage to, and to stand by the company which first puts down prices to the lowest living rate, and gives evidence of a disposition to keep them there. If they do not, and thus virtually aid in driving healthy competition out of the field, they will have to sweat for it when the opposition no longer exists. Not only will prices be put up to the old figures, but above them, to make up the losses incurred in carrying on the war.—*Washington, D. C., Star.*

Tampering with the Fire Alarm in Cambridge.

SOME few weeks since it was found that false alarms of fire were given by the new telegraph apparatus in Cambridge, Mass., by parties who had become possessed of keys to the boxes by fraud, and an investigation by the police led to the arrest of four parties, all young men, for committing the offence, a false key having been made from one abstracted by one of the accused from the store in which he tended, in Cambridgeport, this store being the legal depot for the key of a box close by. This forenoon the parties appeared, on remand, in the Police Court, and Samuel McCulloch paid a fine of \$25 and \$6.03 costs; Charles H. Valentine a fine of \$25 and \$2.75 costs; H. A. Wyeth a fine of \$25 and \$3.28 costs, and B. F. Wyeth a fine of \$25 and \$2.75 costs, which it was thought by Judge Ladd might have the effect to stop this kind of sport in the future.—*Boston Herald.*

THE Army and Navy telegraph code, prepared by Major F. Bolton, has received the sanction of the Postmaster General of Great Britain, for public use over the telegraphs, so soon as they are transferred to the Government.

[From the London Times, Nov. 25.]

Messages from India to London.

THE following relates to the present state of the telegraphic service with India:

"OLD BROAD STREET, E. C., LONDON, }
Nov. 24, 1869.

"I think you will agree that the East India merchants have just cause to complain of the condition of telegraphic communication with the East. For many weeks past messages have been coming with the most fitful irregularity, varying from nine to fifteen days and more, and, as long as we believed all were in the same boat, we have borne the inconvenience with only grumbling; but, when we see that the Indian Council get messages through from Bombay in about thirty-six hours (*vide the Times* of to-day, and the welcome telegram concerning Dr. Livingstone), we feel inclined to do more than grumble and to inquire when matters are to improve. As an instance (one in many) of the present condition of the line, I may name that last Monday's mail from Bombay, with letters dated the 30th of October, brought my firm a copy of a message of the 23d of October, the original of which has never reached us, and is probably 'delayed in Turkey' or elsewhere. Meanwhile, the officials at each end receive our messages and money, but the telegrams themselves constitute a living example of a leap in the dark, as there is no possibility of obtaining any assurance that they will reach their destination at all. Your obedient servant,
A MERCHANT."

An Indignant Editor.

IT is a great disappointment that we should be without a telegraphic report this morning. These failures have been very frequent of late, and the only explanation afforded is that the "wires are down." There is bad management somewhere or the wires would be up, and stay up, in spite of the stormy weather.—*Titusville (Pa.) Morning Herald.*

Telegraphic Messages.

THE Court of Queen's Bench, in England, has recently made an important decision in reference to the responsibility of telegraph companies for mistakes in the transmission of messages. An ice merchant, who had a cargo of ice for sale, received an offer for it by the "wire," at the rate of twenty-seven shillings a ton, while only twenty-three shillings had been offered. The error, which arose from an incorrect reading of the symbols representing the word three, involved the ice merchant in a loss of \$200. On the trial of the action to recover damages from the telegraph company, the Judge held that the company only contracted with the sender of the message, and that the receiver, who alone was injured, was without remedy. This decision was affirmed by the Judges sitting in banc.

The English papers, in commenting on this decision, express their approval of the law in the United States, which treats telegraph companies as common carriers, and holds them responsible, both to sender and receiver of a message, for its delivery in the form it was received for transmission. They also complain that, when the telegraph lines are under the control of the English Government, neither sender nor receiver will have any redress, since the Crown cannot be sued. Although the law in some of the United States is as above mentioned, yet, as was announced in yesterday's *Ledger*, the superior Court of Atlanta, Georgia, has recently made an entirely different decision, holding that telegraph companies are not common carriers, and are not responsible for errors in transmitting messages.—*Philadelphia Ledger.*

A Portuguese Cable.

MADRID, Dec. 3d.—The Portuguese Government has invited tenders for the manufacture and laying of a submarine telegraph cable from Portugal to some eligible point on the American coast, touching at the Azores.

Information Wanted

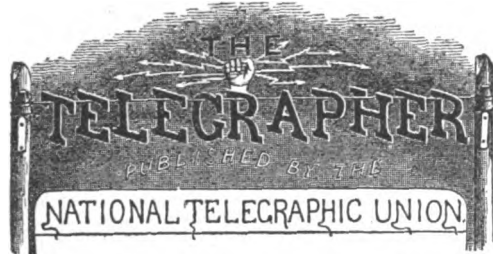
of the present address of J. Martin, formerly an operator in "Cg." in the Michigan Central Railroad telegraph line.

New Patents.

For the week ending Dec. 7, and bearing that date.

No. 99,505.—ELECTRO-MAGNETIC RAILROAD SIGNAL. Thomas S. Hall, Stamford, assignor to Hull's Patent Electric Railway Switch and Drawbridge Company, New Haven, Conn.

I claim, 1. The lever F, connected with the armature D, substantially as herein shown and described, for the purpose of retaining the armature A in contact with its magnet, B, as long as the current through the magnet E remains open, as set forth.
2. An electric signal, provided with a lever, F, which will keep it displayed automatically after the electric circuit through the magnet which set the signal is broken, as set forth.



SATURDAY, DECEMBER 11, 1869.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.
Vice-President..W. O. LEWIS....New York.

Treasurer.....A. L. WHIPPLE....Box 39 P. O., Albany, N. Y.

Recording Sec..W. W. BURMAN....Box 6010, P. O., New York.

Corres. Sec....F. L. POPE....Box 6010 P. O., N. Y.

CONGRESS, THE TELEGRAPH AND "THE TELE-
GRAPHER."

ON Monday last the United States Congress resumed its session, which will continue for several months, this being what is termed the long session. It has many most important subjects to consider and act upon, to which it is to be hoped the members will bring an enlarged experience and a just appreciation of the desires of their constituents, and that their action will be such as to secure to them the cordial approbation of the majority of the people.

With most of the subjects which will come before Congress this paper has little immediate concern. Everything of a political or sectarian character is foreign to the purpose for which THE TELEGRAPHER is published. With such subjects it has nothing to do, and upon them has nothing to say.

But we shall be deeply interested in one subject which is likely to occupy a portion of the time and attention of Congress. We refer, of course, to the projects for a governmental assumption of the proprietorship and control of the telegraph. The little favor which these projects have received from Congress hitherto would seem to be discouraging to the limited number of those who are urging such action, but it has not had that effect.

During the recess of Congress Mr. GARDINER G. HUBBARD has continued the agitation of his scheme for a postal telegraph. It is true that he has met with but little encouragement, and that a very large majority of the people are evidently opposed to his schemes, but he will none the less be found in Washington this winter, urging upon members the favorable consideration of his project.

We do not believe that his chances of success are any better now than they were last winter, if as good. The rapid extension of telegraphic facilities, and the reduction of telegraph tolls incident to the readjustment of the tariff by the Western Union Company, and to the active competition which has already grown up and is increasing, has taken away much of the basis of Mr. HUBBARD's arguments. Still, he continues on with a weary repetition of exploded arguments, relying upon persistence to worry Congress eventually into the adoption of some plan of government telegraph. Of course his plan of a postal telegraph, worked by a private company, in connection with the postal service, and in opposition to all existing companies and lines, is visionary and impracticable, and if adopted would only result in serious pecuniary loss to those (if any could be found) who might contribute to its capital. Probably he does not anticipate its adoption, but regards it only as a project which shall pave the way and smooth over the opposition to a Government telegraph, pure and simple.

The position of THE TELEGRAPHER on this subject is well known. We do not regard a Government management of the telegraph as advisable, either for the Government, the people, or telegraph employés. For that reason we have opposed it in the past, as we shall do in the future, even though we may differ from some good friends of the paper, who have come to a different conclusion on the subject from that which we have reached, after a careful consideration of all that has been urged on both sides.

Other matters of telegraphic interest, such as regulations regarding the landing of foreign cables, reciprocity in cable franchises, etc., are also to be acted upon by this Congress, and will render its proceedings of much interest to the telegraphic profession.

We have made arrangements for the resumption of our series of "CAPITOL" letters from Washington, which formed so interesting a feature of the paper last winter and spring, and in which will be recorded everything of telegraphic interest in Congressional proceedings. These letters will be, if possible, more full and complete than heretofore, and will of themselves be worth the subscription price of the paper to all who feel an interest in telegraphic progress.

We shall spare no pains or necessary expense to make THE TELEGRAPHER the abstract and complete chronicle of all matters of importance or interest to those for whom it is published, and rely, with undiminished confidence, upon the practical telegraphers of the country for a continuance of their liberal support.

Reduction of Telegraph Rates.

It is evident that the Western Union Company is not disposed to be merely a follower in the downward movement of rates. The managers of that company have responded emphatically to the action of the Pacific and Atlantic Company in reducing rates, and manifest a determination to make a "burnt district" of the territory covered by the lines of the latter.

On Monday last the following reduction of tolls was announced by the Western Union Company:—New York City to Pittsburg, Pa., 25c.; to Covington, Ky., 60c.; to Hamilton, O., 60c.; to Springfield, O., 60c.; to Harrisburg, Pa., 25c.; to Louisville, Ky., 75c.; to Memphis, Tenn., \$1 25c.; to Cincinnati, O., 60c.; to Dayton, O., 60c.; to Zanesville, O., 60c.; to Columbus, O., 60c.; Wheeling, Va., 30c.; to Nashville, Tenn., \$1; and it was stated that a further reduction would be announced in a day or two.

To this action the P. & A. Company respond in the following card, in which the claims of that company upon the public for support are forcibly set forth:

A CARD TO THE PUBLIC.

PACIFIC AND ATLANTIC TELEGRAPH COMPANY OF THE UNITED STATES.—OFFICE OF THE PRESIDENT, Pittsburg, Dec. 6. }
The Pacific and Atlantic Telegraph Company of the United States have again caused heavy reductions in the cost of telegraph messages to be made. The enjoyment by the public, wherever its lines extend, of the present extreme low rates, is indisputably the result of the creation of that Telegraph Company. The present rates, while very low, are not less than the management of the Pacific and Atlantic Telegraph Company have always hoped and believed they would be able profitably to establish, although the reduction is now made somewhat earlier than was heretofore contemplated.

If the public use the wires as freely as it has been believed they would when such low rates had been ultimately established, the dearest hopes of the chief organizers of the Pacific and Atlantic Telegraph Company will have been realized, and a cherished wish to be the means of profitably establishing cheap telegraphing in the United States gratified, and neither the stockholders nor the public regret that such low rates have been made somewhat in advance of the time the Board of Directors contemplated.

To whatever figures the rates may fall the fact is beyond controversy that the Pacific and Atlantic Telegraph will be the cause of such reduction. It is to the benefit of every one interested in cheap telegraphing to give the Pacific and Atlantic Telegraph Company the preference, at the same price asked by any other company—their rates to all points reached by their wires being always as low, and often less. All the Pacific and Atlantic Telegraph of the United States ask to fully sustain the policy of the Company, and its heretofore successful pecuniary career, is the warm support and preference of the public. Not even the stockholders are so interested in the continued pecuniary success of the company as the public. That success heretofore has been brought about by cheap telegraphing, and its continuance not only means a sustaining of low rates, but extension of the lines to points yet tyrannized over by the Western Union monopoly, and the release of the business of such sections from the burdens of expense for telegraphing imposed by it.

GEO. H. THURSTON, President,
Pacific and Atlantic Telegraph Company of U. S.

The rates published are lower than the business can be profitably done by any line, and, of course, cannot reasonably be expected to be permanently maintained. The Pacific and Atlantic Company having taken the initiative in the reduction of rates; the Western Union managers have accepted the gauge of battle, and although, for the time, a loss must be submitted to, expect thereby to be enabled eventually to drive the P. & A. from the field, as they did the Atlantic and Pacific States Company of California by similar means.

The P. & A. accepts the situation, and rates by that line have been reduced to the figures of the Western Union. Which company makes the next downward jump?

The Financial and Commercial Telegraph.

THE first section of the above company's line, designed for furnishing reports of the prices of gold and exchange to merchants and others, has just been put in successful operation in this city. This enterprise, although in many respects similar to others now engaged in the same line of business, is intended to occupy a somewhat different field—that of furnishing quotations at low rates to mercantile and importing houses, who have only an indirect interest in the rate of gold, not sufficient to warrant them in employing the more expensive instruments in such general use among the brokers of Wall and Broad streets.

The line has been constructed, and the instruments furnished by POPE, EDISON & CO., contractors, who will also remain in charge of its working until fully completed. The line is constructed in the best manner, with No. 7 compound wire and BROOKS insulators, and the single wire printing instruments of POPE & EDISON are employed. They are of elegant workmanship and appearance, and their simplicity and effectiveness will ensure them a large popularity.

The whole work has been done in the short space of seven weeks from the time the order was placed in the hands of the contractors, a fact which speaks well for the business enterprise of the new firm.

Not Creditable.

As will be seen in the abstract of the Treasurer's report of the Telegrapher's Mutual Life Insurance Association, published in this paper, New England telegraphers only number twenty-five in its membership. Why it is we are at a loss to understand, but the Eastern telegraphers are singularly indifferent to any enterprise or effort calculated to benefit either themselves or the profession. But a very small percentage of the support accorded to THE TELEGRAPHER comes from New England. If the paper had depended upon the telegraphers of that section for existence it would have died years ago.

We have endeavored at different times to awaken an interest in the support of the paper among our Eastern brethren, but with such poor (or at best, temporary) success that we have abandoned the effort, and congratulate the fraternity generally that the telegraphers of other sections of the country are not only able but willing to liberally support a telegrapher's organ.

Whence is this Thus?

ONE of the young ladies who recently "graduated" with a diploma, at the Cooper Institute School of Telegraphy, is now employed by the Western Union Company in the City Department, at 145 Broadway, at the extremely generous compensation of ten dollars per month. This is a rather severe commentary, either upon the value of a Cooper Institute diploma or else upon the liberality of the Western Union Company, but we can't say for certain which.

THE Bath, Maine, Times, says that the Western Union Telegraph Company have bought out the old Kennebec Telegraph Company, and are removing the wires from the country road between Bath and Augusta, and erecting them on the line of the railroad.

The Telegraphic Cut-throat Game.

On Wednesday last the Western Union Company reduced the rate on messages to Philadelphia to ten cents for ten words. Go it, gentlemen, but remember you must pay your own expenses. Don't try to assess any part of the loss on the operators.

Telegraph Wire.

THE advertisement of JOSEPH MOORE & SON, of Philadelphia, in this paper, will be found of interest to all who have occasion to use telegraph wire. This firm manufactures a superior article of office wire, and are prepared to supply or manufacture to order the different kinds of telegraph wire required.

Official Statement, Western Union Telegraph Co.

	Oct., 1868.	Oct., 1869.
Total Receipts.....	\$680,311 81	\$638,926 74
Total Expenses.....	410,604 17	437,533 43
Net Profits.....	\$269,707 64	\$201,393 31

AMERICAN**COMPOUND TELEGRAPH LINE WIRE.****COPPER FOR CONDUCTIVITY.****STEEL FOR STRENGTH.**

The superiority of the COMPOUND TELEGRAPH WIRE, compared with iron, consists in its LIGHTNESS, reducing by over fifty per cent. the number of poles and insulators required;

Relative TENSILE STRENGTH, homogeneity and elasticity—decreasing the liability to breakage from cold weather, sleet, etc.;

CONDUCTIVITY—insuring great improvement in the working of lines in any condition of the weather;

And in its DURABILITY, which greatly exceeds that of the best galvanized iron wire;

Altogether resulting in a very great reduction in the cost of maintaining and working telegraph lines, while, at the same time, insuring

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LINE WIRES,

Switch Cord, Conducting Cord, Pole Cord, &c., in any style, size or color, made of copper, silver, tinsel, &c.

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CONSULTING ENGINEER AND ELECTRICIAN—FRANK L. POPE.
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JOHN R. LYDECKER, Deputy Collector of the Port, Custom House, Wall Street.
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THIS Company will shortly establish a rapid and reliable system of Telegraphic Communication between every portion of New York City and its Suburbs, by the use of improved instruments, and a perfectly insulated system of conducting wires, which will enable them to guarantee the delivery of messages within fifteen minutes; and being provided with facilities for the transmission of an almost unlimited number of messages, cannot fail of securing a profitable business, at the low charge of TEN CENTS for each message of ten words.

The system of conductors employed is the invention of Dr. A. Foucault, combining many wires in a single cable, thus uniting durability with economy, both in construction and repairs. The constant and annoying interruptions incident to the present mode of construction upon poles, and with naked wires, are entirely obviated by enclosing the main lines in subterranean galleries or pipes. This arrangement secures an uninterrupted communication at all times, and under all atmospheric conditions.

The Company will also be prepared to furnish private wires for connecting warehouses with manufactories, and dwellings with offices, with suitable instruments, at reasonable rates. Subscriptions to the capital stock received at the office of

TURNER BROS., cor. Pine and Nassau Sts.

C. WESTBROOK & CO.,

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Having succeeded J. J. CLARK in the manufacture of Telegraph Instruments and Supplies, we shall continue the business as above, and hope to more than sustain the reputation of the Clark Instruments by introducing the modern improvement in their construction.

Special attention paid to repairs, and instruments promptly returned.

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Among other Telegraphic Supplies constantly kept on hand, they are prepared to furnish promptly the following novel articles:

KERITE (OR HORN COVERED) COPPER OR COMPOUND WIRE OR CABLES,
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BLASTING APPARATUS, CARTRIDGES, BATTERIES, &c., &c.
CALCIUM LIGHTING APPARATUS,
MEDICAL BATTERIES,
INDUCED AND DIRECT CURRENTS;

ELECTRO-PLATERS' BATTERIES AND MATERIALS,
ELECTRO GONGS, OF ANY DESIRED SIZE OR WEIGHT,
ALARM APPARATUS.
PATENT APPARATUS FOR THE MANUFACTURE OF NITRO-GLYCERINE, ELECTRICAL CLOCK WORK,
&c., &c., &c.

They guarantee to give satisfaction to all who favor them with orders, in the promptness of execution and in the quality of articles supplied.

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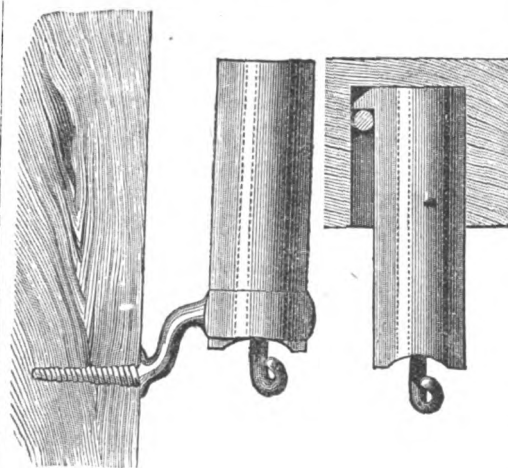
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JOURNAL OF ELECTRICAL PROGRESS.

Vol. VI.—No. 17.

New York, Saturday, December 18, 1869.

Whole No. 179.

THE SECRET OF THE AURORA BOREALIS.

RECENT DISCOVERIES EXPLAINED.

THE London *Spectator* has for some months distinguished itself by a series of astronomical articles, combining full scientific information with popular interest. The latest is the following, published in that paper on October 9, and explaining some recent discoveries of importance, tending to explain the true nature of the Northern Lights:

"Men of science have long felt that a strange secret lay hidden in the brilliant folds of the aurora. The magic arch, with its pointed streamers shifting silently but swiftly across the heavens, pulsating mysteriously, as though illuminated by the fitfully changing glow of some concealed furnace, and rendered surpassingly beautiful by the brilliancy of its colors, had always had strange charms for men of thoughtful mind; and gradually a series of laborious researches had revealed the laws which associate this beautiful apparition with disturbances affecting the economy of our whole earth, and not indistinctly connected with the habitudes of the solar system itself. But recently a discovery has been made which is even more remarkable than any which had ever before rewarded the labors of physicists—a discovery at once instructive and perplexing, revealing a bond of union between the aurora and a phenomenon hitherto thought to be quite different in character, but leaving us still to learn what the exact nature of that bond of union may be. Let us consider what had been learned respecting auroral displays and their relation to the earth's economy.

"We had occasion recently to point out that a sudden disturbance in the sun in 1859 had been presently followed by intense magnetic action, the whole electric system of the earth quivering, so to speak, under the influence of the solar forces educed by the disturbance. And we mentioned that among the signs of this magnetic action brilliant displays of the auroral streamers had been witnessed in both hemispheres on the night following the solar disturbance. This circumstance teaches us the true character of the aurora as strikingly as any which astronomers and physicists had patiently been gathering together during the past half century. We learn at once that a relation subsists between the auroral terrestrial magnetism and the central luminary of our scheme.

"And even if we were to pause here, we should have learned enough to indicate the significance and importance of the aurora. Our earth, we may be sure, is not the only recipient of that mystic influence which rouses into activity the phenomena we term magnetic. Over the whole realm which it rules the central orb sends forth the strange electric impulses. When our skies are illuminated by the magic streamers, we may be sure that those of Venus and of Mars, of Jupiter and of Saturn, nay, even the skies of those unseen orbs which travel far out in space beyond the paths of Uranus and Neptune, are lit up with auroral displays. When once it has been shown that we owe our auroras to solar action, we recognize the cosmical character of the display, and that, in a sense, the terrestrial magnetism on which it depends is a bond of affinity between our earth and its sister orbs.

"But while we were thus taught the true significance of the aurora, we were left in doubt as to the way in which the solar action aroused the electric luminosity in the upper regions of our air. We could not even tell at what elevation the light was suspended above our earth. The most eminent physicists differed in their views as to the possibility of learning where the magic streamers really wave when we see them most distinctly. While Arago had held that to attempt to measure the height of the aurora was as futile as to attempt to measure the height of a rainbow, Sir John Herschel considered that precisely the same laws of measurement might be ap-

plied to the aurora as to any object raised high above the earth.

"One point, however, was well determined. The auroral lights are undoubtedly to be ascribed to electric action taking place at a very considerable height, where the air is very rare indeed. It became, therefore, a question whether anything could be learned by analyzing the auroral light, as to the condition of that particular part of our atmosphere in which the electric action takes place.

"Spectroscopic analysis, that strange and powerful mode of research which has revealed so many unlooked for facts, was accordingly applied to the light of a brilliant aurora. The result was rather surprising. Instead of a rainbow-colored streak of light, such as would have appeared if the aurora were due to the existence of particles excited to luminosity by electric action, a single line of colored light appeared. This indicated that the light is due to the incandescence of some gas through which the electric discharges in upper air take place. But this was not the circumstance which attracted surprise. Rather, this was to have been looked for. It was the position of the line which astonished our physicists. If the gas had been one which chemists are acquainted with, the bright line would have occupied the position proper to that gas, and would at once have indicated its nature; but there is no known element whose spectrum has a bright line where this one appeared. The observation has been repeated over and over again, by Angström, by Otto Struve, and recently by Mr. Plummer, always with the same result. We cannot tell what the substance may be to whose incandescence or luminosity the aurora owes its brilliancy.

"But now a most remarkable discovery has been effected. Angström has found that the mysterious line of the auroral spectrum exists in the spectrum of another object, which had been thought to be wholly different in character. Ever since its discovery by Cassini the zodiacal light has been an object of interest to astronomers. Gradually a theory had been formed respecting it, which had been sanctioned by the authority of such men as Humboldt and Sir John Herschel. It was held that this appearance is due to the light reflected from a multitude of minute cosmical bodies travelling around the sun within the orbit of our earth.

"This theory had never been tested by spectroscopic analysis. Indeed, the zodiacal light shines so faintly that it was hardly hoped that its spectrum could be rendered visible; but it was confidently anticipated that if the zodiacal light ever were thus analyzed, its spectrum would be that which the theory required—that is, a very faint reproduction of the common solar spectrum.

"Now, at length, we hear from Angström that the spectrum of the zodiacal light has been observed, and instead of being, as had been expected, a faint rainbow-colored streak, it presents but a single line. That line is the same that we see in the spectrum of the aurora! In other words, the light of the zodiacal gleam and that of the auroral streamers are due to the same sort of electric discharge taking place in the same medium.

"Without pretending to further interpret this startling result, we may indicate the promise it affords of explaining a number of phenomena which have long seemed most perplexing. When once we recognize the fact that electric action is effective in producing any of the celestial lights, we have a resource available to remove many difficulties. Astronomers were asking how comets, for example, could exhibit the spectrum of the incandescent vapor of carbon—that is, a spectrum indicative of the most intense heat, when, as in the case of Winneck's comet (whose spectrum was of this nature), they were farther from the sun than the earth is. The action of the sun in exciting electrical discharges would be quite sufficient to account for this and similar phenomena. Again, it has been long recognized that the peculiarities

of comets' tails seem only explicable as due to electrical action; but astronomers were unwilling to adopt such a theory without some positive evidence in its favor. We now have such evidence; and it is most probable that the first long tailed comet which is submitted to spectroscopic analysis will establish the view which Euler put forth, more than half a century ago, that comets' tails have something in common with the aurora and the zodiacal light. It would, indeed, be strange if three of the most mysterious phenomena with which men of science are acquainted should find their explanation simultaneously."

The Wreck of the Bark "Preciosa."

WITH regard to the wreck of the *Preciosa*, reported a few days since as being removed, we have received the following additional particulars: The bark *Preciosa*, which was wrecked last summer off Hare Island, in a position which rendered navigation dangerous, has been removed by Messrs. Rousseau & Patterson, contractors with Trinity House for work. They successfully accomplished the removal and cleared the channel of all the wreck by blasting. She was sunk in 42 feet of water—9 feet being over her decks at low water. There is now 33 feet over the ballast which was in the wreck, all of her being entirely removed. An electric battery was used to fire the blast. This is the first time, we understand, electricity has been used for a work of the kind on the St. Lawrence. Owing to the rapid current of the river where the wreck lay, the great depth, and consequent heavy pressure of water, blasting was a work of difficulty; but after a few experiments the difficulty was overcome, and the electrical arrangements made to work successfully, enabling Messrs. R. & P. to clear the channel of the sunken wreck in a short time. Mr. B. McCord, of the telegraph office of this city, was employed by R. & P. to superintend and put the electrical arrangements in operation.—*The Quebec Gazette*.

Telegraphing Extraordinary.

SOME singular and amusing specimens of telegraphic incomprehensibility have been recently furnished by the new Indo-Russian line, which was opened a few weeks since. The *Bombay Gazette* says: "It is but due to it that we should acknowledge in our overland summary the remarkable service it has rendered to India, as a means of transmitting public news and private advices," and thereupon gives several specimens of Reuter's despatches from London, as they were received in Bombay. Among these curiosities of telegraphy are the following:

"LONDON, 17th.—Alderman salomon titus salt baromds crawfords refused corranclay another agriablan assination ireland carecton butury catholic archbishop Armach.

"21st.—Days insurrection volontry Barcelona refused disarm erektea bariechres tatetupl send amalse of severe fighting orders restored Jestik fleary pattot cornuned sonied.

"27th.—Having change prefory by shareholders against manager directors Albert Assurance for consnai conweed Saturday Ignid-otors examined no caneil fremd on part directors cose adanaten.

"29th.—Spisow clarundas al ounheral association lord been an continent head opportunity collected opinions seen persons who exercise influence on bestiws Europe and believe at no time since prussians austrian pael existed faviar paus pant monte moniemnt blessing peace."

These are about the hardest conundrums we have ever tried, and failed to guess.

A POSTAL TELEGRAPH.—Slow, inefficient, unprogressive, unaccommodating, and not wanted in a Republic.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., Dec. 16th.

TO THE EDITOR OF THE TELEGRAPHER.

PENDING the holiday recess Congress does not seem disposed to interfere much with telegraph matters. On Friday of last week, on motion of Mr. Fernando Wood, of New York, the Committee on Foreign Affairs was directed to inquire into all the facts attending the landing of the French telegraph cable upon our shores, and also to ascertain whether France had, in connection with said cable, taken any action prejudicial to the United States.

The great point which is made against the French cable is not so much the exclusive concession of the privilege of landing cables from America on the French coast, although that must eventually be waived, but the fact that the French Government reserves to itself the right to examine all cable despatches at that end of the line, including official messages to and from our Government. There is no doubt but that both the Senate and House Committees will sustain the views of President Grant, as set forth in his message, relative to ocean cables, and that during the session there will be some general legislation on the subject, applicable to all ocean telegraph enterprises.

The French cable question was considered by the Senate Committee on Foreign Affairs on Monday last, but no conclusion was arrived at. Mr. Sumner, who has been unyielding in his opposition to the enterprise from the first, had considerable to say touching ocean cable matters generally, and the French cable in particular.

The Postal Telegraphers have not as yet made any demonstration, but are quietly at work through the *Chronicle* of this city, and other well known lobby organs, preparing the public and Congress for a renewal of their operations after the holiday recess. They state that although the present Postmaster General did not allude to the subject in his annual report, he will hereafter recommend legislation looking toward the adoption of a postal telegraph system. This may very probably be true, for Postmasters General, like other heads of departments, are generally in favor of anything calculated to increase their importance and patronage, but his favor will not be sufficient to carry such a measure against the better judgment of Congress.

In the House, on Thursday last, Mr. Paine, of Wisconsin, introduced a bill directing the Secretary of War to cause meteorological observations at military stations, and in the interior of the country, and on the lakes, to notify mariners on the lakes and Atlantic coast by telegraph of the approach and nature of storms.

It will be recollected that, during the last session of Congress, a Dr. M. Loomis of this city, made an effort to get a bill through Congress appropriating money to enable him to experiment on what he calls Aerial Telegraphing, or telegraphing without wires, an account of which was published in THE TELEGRAPHER at the time. The Doctor is not disposed to abandon his efforts to secure a chance at the public crib, but it is understood will press his claims for an appropriation for the continuation of his experiments. His chances of success are small.

I understand that the Western Union Company have an office or headquarters somewhere in Washington, established for the season, and that Mr. Walker, of Springfield, Mass., one of the Vice-Presidents of the company, will remain here to look out for jobs, and to work up the appropriation to aid in laying a new cable from the Pacific coast to China. Passes entitling the holders to a free use of the facilities of the company have been liberally distributed around the Capitol, and means used to enlist knowing ones, including some of the clerks of committees and employees at both ends of the building. The indications are that pecuniary and other influences well known to Washington lobbyists will be freely used to carry out certain telegraphic projects.

It is rumored that Gen. Fremont is here in connection with some telegraph scheme, but as far as can be ascertained his business is confined to Pacific Railroad matters. Time will show.

CAPITOL.

Baltimore and Ohio Railroad Telegraph Lines.

BALTIMORE, MD., Nov. 30th.

TO THE EDITOR OF THE TELEGRAPHER.

I HAVE not, recently, noticed in the columns of THE TELEGRAPHER any communication from the B. & O. R. R. line, and purpose giving such items as may prove interesting to those who once occupied positions upon it and have sought elsewhere for "honor and renown."

To the general reader I know of little that will claim attention; but to those who have been, telegraphically, born upon this line, the whereabouts of their once co-laborers, or, in fact, any "news from home," will, doubtless, be welcome.

To begin at the beginning: The worthy superintendent, Mr. Davis, still maintains the credit of the lines, both as regards their well known capacity for work and the judicious appointment of the right men in the right places for transacting the business of the R. R. Co., the immense volume of which is only known to those who have had a hand in its transmission and reception.

Of Mr. Davis it is quite unnecessary for me to speak, but I may be permitted to say that he still retains that *bonhomie* and good fellowship towards the "boys" which is characteristic of him in a greater degree than in any superintendent I have met, making it a real pleasure to work for him. Though strict discipline is required, it is never enforced in such a manner as to give cause for complaint. I have yet to meet the first operator who, however "crotchety" he might be, harbored aught but respect for his abilities as a superintendent, and honor for his qualities as a man.

As Baltimore is the headquarters of the railroad company, and all its immense business is managed and directed here, of course the Baltimore office is first in importance, and requires to be well managed to insure the efficiency of the whole line. Mr. H. Craig is the manager of the office which is located at Camden station, and his ability as an operator and manager are too well known to require any endorsement or illustration. He is ably assisted by Messrs. Hill and Chaivre, formerly of Grafton, W. Va., and Mr. J. E. Spinner.

After closing of the Harper's Ferry office, last spring, Mr. J. D. Flynn, one of the old Potomac warriors, familiarly known as "Jerry," was thrown out of a situation, but shortly thereafter was appointed to Wheeling office, *vice* Mr. R. H. Ryan, who concluded to commence business in the West, and forsook the key for that purpose. Mr. Flynn is assisted by Messrs. Fulton and Blake, and the important business at that point meets with prompt attention at their hands.

Mr. G. B. Scott presides over Grafton, the most important office outside of Baltimore. "G. S." emphatically stands upon his merits. His knowledge as an electrician and expertness as an operator are well known, whilst his proficiency as a velocipedit, gymnast, and, in fact, all manly games, is looked upon with astonishment by those who do not possess the same adaptability of muscle. Mr. Scott has as his aids Messrs. Cline, Brendel and, temporarily, Mr. Flurschutz (*the tester*) from Cumberland.

Mr. G. E. Rainsford reigns supreme at Parkersburg, having received the appointment of manager upon Mr. Rowe's retiring from that position. George, as we all know, is a

"Jolly good fellow,
That nobody can deny,"

and his duties are always performed in an eminently satisfactory manner. Johnny Ryan and — Ward are Mr. Rainsford's assistants. Mr. Deitz, at Cumberland, is assisted by Messrs. Shriner and G. O. Smith, temporarily. An operator can always depend upon being used squarely by "De."

Mr. Frank Benner, assisted by Mr. Englerth, has charge of Martinsburg office. Frank's name will no doubt be noticed with pleasure by many of his former associates in the Southwest and South, during and following the late "onpleasantness." His record is a good one, and he has always had the respect and confidence of his brother operators wherever his lot has been cast.

Mr. M. L. Kellings goes it alone at Washington depot. He has done the same thing for nearly three years, and although business is heavy and increasing, he plays his hand to perfection. Mart never gets stuck. I shall endeavor to furnish any further items that may be of interest in my next.

INDEX.

Obituary.

MONTANA, IOWA, Dec. 10th.

TO THE EDITOR OF THE TELEGRAPHER.

DEATH has visited this circuit and taken from us a beloved associate. Mr. Anson V. Carr, an operator in the Western Union office here, died just before five o'clock, Dec. 7th, of typhoid fever, at Fulton, Ill.

Mr. Carr, although a young man of only eighteen years of age, was for a long time employed in the office here, and was highly esteemed and beloved by those with whom he was associated.

For the first time, in the history of our circuit, our little brotherhood has been visited by death. His mandatory call sounded along the line, and one, whom it seemed could least be spared, has answered the summons. Fortunate is he who, departing, leaves so pleasant a memory.

At a meeting of telegraph operators held in this city

on the 8th inst., the following preamble and resolutions expressive of their sentiments were adopted:

Resolved, That remembering his many genial and amiable characteristics, and cherishing his memory with affectionate respect, we humbly bow to the decree of the Supreme Disposer of the affairs of men.

Resolved, That as fellow workers and associates of our friend, Anson V. Carr, we extend our heartfelt sympathy to his parents and family in their great bereavement.

Resolved, That as fellow telegraphers, as a token of our respect and kind remembrance, we will decorate our offices for ten days with the usual badge of mourning.

Resolved, That a copy of the foregoing be forwarded to the relatives of the deceased, and published in the *Boone County Democrat*, *The Journal of the Telegraph*, and *The TELEGRAPHER*.

M. M. Towne, E. F. York, K. D. Root, Frank H. Britton, J. K. Gullihur, Frank Kendall, A. Bathrick, T. W. Cox, E. G. Holiday, M. O. Robertson, S. G. Bangs, F. D. Tracy, H. C. Newton, F. H. Morgan, H. H. Hunt, C. K. Spinner, C. G. Ashley, R. S. Todd, E. A. Franklin, Jno. Morse, E. D. Bailey, E. Bailey, C. F. Resegne, John B. Saxby, W. A. McElroy, S. D. Fulmer, J. W. Belding.

There is but little to add to this expression of the feelings of the associates of the deceased. We shall see him no more upon earth, but his memory will be cherished until our final "Good night" on earth shall dismiss us from duty here, to join him in another and we humbly believe a better world.

Justice.

BOSTON, Dec. 13th.

TO THE EDITOR OF THE TELEGRAPHER.

REFERRING to a communication in THE TELEGRAPHER of December 11th, signed by the "Boston Operators," in which credit is given to myself for the success attending the removal of the Boston office operating department in a single night, without interruption of circuits, I wish to state, while thanking the operators for the compliment bestowed, that this success was due to the perfect and systematic arrangement in the new operating room of about fifty main wires and seven loops, with their table and battery connections, previous to the time of removal, by Madison Buell, Esq., electrician of the eastern division of the W. U. T. Co. Mr. Buell's foresight and complete arrangement for transferring each wire at the proper moment prevented any possible chance for confusion or interruption of circuits, and the readiness with which the operators adapted themselves to the new arrangements, locations, &c., contributed largely to the general success.

Respectfully,

G. F. MILLIKEN, Manager.

Changes in Milwaukee and St. Paul R. R. Telegraph.

PALMYRA, WIS., December 3d.

TO THE EDITOR OF THE TELEGRAPHER.

ALTHOUGH silent so long we have not remained stationary. The usual number of changes occur on this Division of the M. and St. P. R. R., and perhaps some of the readers of THE TELEGRAPHER may be interested in hearing from us. The following changes have recently occurred in the Prairie du Chien division:

Mr. C. S. Wakeman, assistant train despatcher at "C" office, Milwaukee, has received and accepted a call to go to McGregor, Iowa, as train despatcher of the I. & M. division of same road.

Mr. C. Kittredge, night operator at the same office, is promoted to assistant in superintendent's office on L. division, as well as St. Paul. He rotates between "A" and "C" offices. His former place is supplied by Mr. Payne.

Mr. Hughes, of Prairie du Chien, takes Mr. Wakeman's place at "C." Mr. H. Williams, of Whitewater, goes to Prairie du Chien.

Mr. C. Norton, of Manzomanie, goes to Whitewater. Mr. Brockway, late night operator at Prairie du Chien, accepts Manzomanie day office.

Mr. Hawley, of Boscobel night office, goes to Prairie du Chien night office.

Boscobel and Whitewater night offices have been closed on account of lack of operators.

Miss Walker, of Wawzeka, has accepted Palmyra night office. Miss Brett is assistant day operator. Miss Williams still retains her situation as day operator and general manager.

Mr. Stearns, operator at Jonesville "Bo" office, has been sick for several months. Mr. H. Rowe, chief clerk at the same place, is subbing for him, to the best of his ability, in addition to his regular duties.

Mr. Doyle, of Manzomanie, has resigned, and gone "away out West." Mr. Horton, of Whitewater night office, fill his place.

Mr. O. D. Rowe, of Edgerton, has gone and got married.

FRANK.

The Telegraphic Contest in the West.

MILWAUKEE, Dec. 13th.

TO THE EDITOR OF THE TELEGRAPHER.

You must be informed of what is going on in the telegraph business here. The Western Union has put down the brakes on the Great Western, hoping to kill it off, but it's no go; the people are with the latter company. We have all quit writing letters; all go to the telegraph office, and have our communications go by lightning, at a cent a word, to and from Chicago to the city. You down-easters can't do that. Everybody has enlisted himself or herself as a runner for the Great Western. Old price, 60 cents for ten words; present price, 10 cents. Old Father Snow is shaking his sides with laughter over financial results.

EPII.

The L. S. and M. R. R. Telegraph Line.

DULUTH, MINN., Nov. 21st.

TO THE EDITOR OF THE TELEGRAPHER.

THE Lake Superior and Mississippi Railroad Telegraph is now completed to Duluth, at the extreme west end of the Lake—Mr. J. J. Squires acting as superintendent of the work; offices at St. Paul, Wyoming, Rush City, Pine City, Hinkley, Moose Lake, Fond-du-Lac and Duluth, all in Minnesota. This line is one hundred and sixty miles in length, and is independent in its management. Mr. B. A. Squires, chief operator and circuit manager, Duluth.

SUPERIOR.

A Dark Rhyme.

PITTSBURG, PA., Nov. 29th.

TO THE EDITOR OF THE TELEGRAPHER.

PLEASE insert the following poetry in the personal or correspondence column. PITTSBURG NIGHT FORCE.

The bards of Pittsburg are not dead,
As will be seen when this is read,
For here we give a list of men,
The owls who enliven the Pittsburg den.
First is Fisher, our worthy chief,
Then Joe McConnell, who needs no relief,
And Charley, his brother, special receiver,
Then our all night man, Peter McKeever.
Next, Jimmy Kerr sends specials west;
With our smiling friend Gilliland, who needs more rest;
Also, Dugan, who works around short,
And last comes Lloyd, who takes report.

WHEN DID YOU GET BACK?

Railroad Telegraphing.

CHICAGO, Dec. 6th.

TO THE EDITOR OF THE TELEGRAPHER.

IN your edition of December 4th, just received, you publish an article upon train despatching by telegraph, from the New York *Evening Post*, in which the credit is given to Charles Minot, of the Erie Railway, of sending the first train order, regarding movements of trains, by telegraph.

Without desiring to detract from Mr. Minot's reputation in the premises, let me mention that, in the winter of 1849-50, when conductor upon the Michigan Southern Railroad, my train, eastward bound from Adrian, Mich., burst a flue at Palmyra station, on the Monroe line. I had a large train of passengers; among them thirty or more witnesses in an important suit then being tried at Detroit. My train connected with the little steamer "Telegraph" at Monroe, for Detroit, and the passengers, apprehensive that the boat would leave without them, were clamorous at the delay. Having a relay on the train, I cut the line wire and sent a message, and held the boat for the train. This was the first instance, I think, in the west, of a train order; but in England the idea, at least, was much older.

I have before me a copy of an English pamphlet, entitled "Telegraphic Railways; or, the Single Way recommended by Safety, Economy and Efficiency, under the Safeguard and Control of the Electric Telegraph, &c. By Wm. Fothergill Cooke, Esq." Published, London, 1842. This ancient telegraphic curiosity has a large chart, illustrating fully the manner in which trains were to be moved on a single track by means of telegraphic signals or orders, given by the station masters from station to station. The instruments then in use on the Blackwall Railway are illustrated by diagrams, and the use of these instruments fully explained.

Much as I should be pleased to know that moving trains by telegraph was an American invention, the facts are against such an assumption, as I have shown.

CH. H. HASKINS.

TO CORRESPONDENTS.

O. P. RATOR, Xd.—Please repeat your "Personals" of 7th more fully, giving name of the road and of offices without abbreviation—also your own name.

PERSONALS.

Mr. E. A. STREET, formerly of Quincy, Ill., has accepted a position in the Western Union office at St. Louis, Mo.

Messrs. C. R. LANE, of the Western Union office at Columbus, Ohio, and W. JENKINS, of Cincinnati, have exchanged situations, the former going to Cincinnati on the day force, and the latter to Columbus.

Mr. W. H. HUNSAKER has accepted a situation in Columbus, Ohio, Western Union office.

Mr. W. MOORE has returned from his tour to Washington and the South, and has resumed the manipulation of the wires on the Valley line.

Mr. JAMES FRANK MORRISON has resigned his situation with the Western Union Company at 145 Broadway, and has taken a position as telegraphic manager of the New York News Association.

Mr. J. H. BARD writes us that he is still manager of the Western Union office at Bowling Green, Kentucky to which Mr. R. M. STAPP was announced as appointed in a recent number of THE TELEGRAPHER.

Mr. A. M. ARDERY, formerly in the Western Union office at Slippery Ford, Cal., has accepted a position with the Central Pacific R. R. at Carlin, Nevada.

Mr. CHARLES K. HAMBRIGHT has been transferred from the Harrisburg, Pa., to the Williamsburgh, Pa., Western Union office.

Mr. JOHN A. MACDONALD, of Ottawa, Ontario, has resigned his position in the People's Telegraph office at Quebec, and intends shortly going West.

Mr. JEREMIAH A. BORST has retired from the Western Union New York main office.

Mr. F. H. PALMER, formerly superintendent of the American Telegraph Company, and later the manager of the Merchants' Exchange News Room in Boston, has been made mayor and municipal judge of St. Augustine, Fla., after a residence of less than a year.

THE TELEGRAPH.

(By Atlantic Cable.)

The English Telegraphs.

LONDON, Dec. 9.—The Government will take possession of the telegraph lines of the country on the 1st of Feb. next, according to the provisions of the law recently enacted.

LONDON, Dec. 12.—It is reported that Mr. Low, the Chancellor of the Exchequer, does not find it necessary to raise a loan in open market, in order to provide means for the purchase of the telegraph lines of the United Kingdom, in accordance with the recent Act of Parliament.

Telegraph Excitement in France.

PARIS, Dec. 9.—That portion of the President's Message relating to neutrality in the matter of ocean cables, printed here to-day for the first time, causes great excitement.

The Telegraph in Peru.

ADVISED from Lima, Peru, to Nov. 21st, received by way of Panama, states that the project of Sr. Paz Soldan, for the laying of a submarine telegraph cable from Tumbes to Panama, has been gladly accepted by Government, as no conditions as to privilege or guarantee of interest on capital laid out are stipulated for. The terrestrial line from Callao to Tumbes, the frontier town, will be completed in a few months. This line is now open as far as Malabrigo.

The proposal of Mr. Henry F. Ross has consequently been rejected for a submarine cable all the way from Callao to the Isthmus of Panama, as he bargained for the concession of twenty-five years' privilege, besides a guarantee of six per cent. interest on the sum of £350,000, the estimated cost of the undertaking. The Government has given out a decree with reference to the system of telegraphs, including all necessary regulations.

The Great Western Telegraph Company.

THE lines of the Great Western Telegraph Company are still progressing. Offices were opened last week at Wyandotte, Anawam, Genesee, Wilmington and Rock Island, in Illinois, and Davenport, Iowa, and during the present week at Burlington and Muscatine, Iowa.

On the 8th of this month the poles were set through the city of Des Moines, Iowa, and poles are being delivered between Des Moines and Omaha, Nebraska.

Advices from Alton, Ill., of same date, state that the poles were also set through that city, and the line will reach East St. Louis next week from Chicago.

The German-American Telegraph.—Further Particulars.

THE whole line is to be completed and opened for traffic in June next year, direct telegraphic communication between New York and the four principal commercial cities of Germany being provided by the German Federal Telegraph Department, which has undertaken to put up special wires from the place of landing—most probably the lighthouse at the mouth of the Weser—to Bremen, and thence respectively to Berlin, Hamburg, and Frankfurt-on-the-Main. The agreement entered into between the German Concessionaires and the Atlantic and Newfoundland Company consists of two parts, a political and a financial one, and is not to be considered as perfected and binding till it has received the consent and approbation of the Chancellor of the North-German Confederation, which is moreover required in case of any subsequent alteration in the future arrangements. According to one of the clauses of the agreement, it is stipulated that after the expiration of five years the German Company shall be at liberty to lay a deep sea cable of its own, should the traffic have so increased as to warrant their embarking the additional capital required for that purpose. At Berlin they look upon it as a certainty that it will be required if the telegraphic communication with America increases in future in anything like the ratio of the past, for our correspondent at Berlin states that during the last two years the traffic has quintupled itself.

Electric and Signal Military Telegraphy.

THE Secretary of War, in his report to the President, referring to the telegraph and signal service, says:

"The courses at the Military and Naval Academies have been pursued as in previous years. The drill, embracing that of the field electric telegraph and flag stations in the field, at West Point, before the Board of Visitors, received their commendation, and all the duties of sending messages by signals or by telegraph were performed by the cadets. The organization and development of the field telegraph has received especial attention, and continued tests have been made with portable lines, such as are used with trains in the field. The field telegraph trains are organized in a military form, which requires all the movements to be executed at the word of command. An object has been to provide a train so equipped and organized as to enable four portable lines carried in it to be erected simultaneously, at about the rate of three miles an hour."

Cheap Telegraphs.

THE *Courier de Lyons*, France, gives the following details relative to the local telegraph service:

"Since the reduction in the tariff the number of despatches forwarded has increased by more than one third. As the diminution in the charge is one half, the messages formerly two francs now cost one only, and those at one franc being reduced to fifty centimes, there should have been a falling off in the daily receipts. Such, however, is not the case, for since the 1st inst. the returns have increased at the Lyons office, in consequence of an inexplicable augmentation in the number of international despatches, the price of which has not been reduced. Every precaution has been taken to prevent the lines being encumbered by an excess of business. A large number of additional wires have been added to those between the principal stations, from Paris to Lyons especially, and, with the exception of the first two days of the new tariff, we have remarked no irregularity in the service."

New Patents.

For the week ending Dec. 14, and bearing that date.

No. 97,756.—Antedated Dec. 1st, 1869. ELECTRO-MAGNETIC ADVERTISING FRAME. Joshua Brooks, Boston, Mass., assignee to himself and Benjamin E. Corlew, same place.

I claim 1. Drums H H', ratchets h h', pawls g g', crank e' e', e f, and bars d d', in combination with an electric magnetic apparatus, substantially as described.

2. Drum H, strap g, stud p', in combination with bell crank lever m' l', rod r, wire s, ball t, and pawl q, substantially as described.

No. 97,949.—GALVANIC BATTERY. James R. McPherson, Beloit, Wis.

I claim the iron jar A, filled with metal chips, saturated with a weak solution of muriatic or sulphuric acid, or strong solution of sal ammoniac, in combination with the inner porous jar C, filled with black oxide of manganese and nitric acid, and the conductor E, all arranged to operate as herein described and shown.

BORN.

COLLINS.—To B. F. COLLINS, manager of the Western Union Telegraph office at Richmond, Texas, on Saturday, October 30th, a daughter.

WILLIAMS.—To J. S. WILLIAMS, manager of the Pacific & Atlantic Telegraph office, at Columbus, Ohio, Dec. 2d, a daughter.

DIED.

CARR.—December 7th, at Fulton, Ill., of typhoid fever, ALANSON V. CARR, aged 18 years.



SATURDAY, DECEMBER 18, 1869.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.

Vice-President..W. O. LEWIS....New York.

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THE TELEGRAPHIC FIGHT.

WE have published of late something in regard to the suicidal contest which has been inaugurated between the Western Union and Pacific and Atlantic Companies. The indications are that this contest will increase in bitterness as it progresses, and is likely to have important results. As the organ of the practical telegraphers, the contest possesses for us, and for those we represent, peculiar interest. In fact, every practical telegrapher is deeply interested in the progress and result of this contest. It has a direct bearing upon the compensation of every man connected with the business in this country.

This new conflict was inaugurated in California, between the Western Union and the Pacific and Atlantic States telegraph companies. The people of the Pacific coast are naturally restive under the monopoly enjoyed in that section by the Western Union Company, and which has been maintained, with but short and partial intermissions, since the telegraph was first extended to that section of the country. The citizens of California have always manifested a strong feeling in favor of any opposition company which promised relief. The collapse of the United States Telegraph Company, through fraud and mismanagement, terminated what promised to be an effectual relief from this monopoly. Subsequently the Atlantic and Pacific States Company was formed, and commenced vigorously to extend its lines on the Pacific coast. It had the favor of the people, and was making such progress that the managers of the Western Union Company became alarmed, and determined that it must be suppressed at whatever cost. Accordingly an active competition was inaugurated, and the prices for telegraphing, wherever the A. and P. States lines extended, were reduced to merely nominal figures, at which the receipts would not pay office expenses. The A. & P. States had no Atlantic connection, and was finally compelled to succumb, and accept the offers of consolidation made by the Western Union Company, and a few months since ceased to exist. The Western Union monopoly was re-established, and the old rates restored.

The Great Western Company of Illinois was formed, and its lines built over an important section of the Western Union territory. The same tactics are resorted to for the purpose of destroying this company. The rate from Chicago to Milwaukee, which was previously sixty cents, has been reduced to ten, and like reductions made to other points reached by the Great Western. Thus far the effort to ruin the Great Western has not been successful. Accepting the situation, the managers of that company put the rates down to those of the Western Union Company, and appealed to the telegraphing public for support. As we are informed, this support has been generally accorded, and the information which is publish-

ed in our paper this week of the continued extension of its wires, and the opening of numerous additional offices, would seem to show that, so far at least, the Great Western has been able to hold its own.

Recently, as our readers know, the Pacific and Atlantic Company of the United States—which, under the management of Mr. GEORGE H. THURSTON, its President, has been extended, by the building of new lines and the absorption of the wires and business of several other competing companies, over quite a large portion of the West and Southwest—built a line from Philadelphia to this city, and opened an office here. This company signalized its appearance in the great commercial and telegraphic centre of the country by a reduction of the rate to Chicago and other leading points. This aggressive action stirred up the managers of the Western Union Company, and they resolved to go below the rates established by the Pacific and Atlantic Company, but were forestalled by the latter, who came out a day ahead of them with the announcement of a still further reduction.

As stated in our paper of last week, the Western Union Company has since announced a schedule of very low rates to most of the principal points covered by the P. and A. In fact, the rates are put down to a figure at which no company can pay expenses. It was further determined last week by the Western Union Company to reduce the tolls on messages to Philadelphia to ten cents, but we are informed that this action has been reconsidered, and for the present the old rates are maintained. What the next move in the game may be will perhaps be developed before our paper for the present week goes to press. We have thus briefly stated what we believe to be the facts in the matter, and the present position of the contending parties.

Of course, if these companies are benevolently desirous of doing business at a loss to themselves, we have no objection to offer, so long as the stockholders are willing to suffer the loss. What we do and shall object to is the assessment of any portion of this loss upon the operators or other telegraphic employés. As was well said by a correspondent last week, "*If these companies want to fight let them pay the expenses themselves.*" The employés have had no hand in inaugurating the fight, and should not be called upon to suffer loss thereby. Telegraphers do not desire these absurdly low prices for telegraphic service, and should not consent to any proposition to charge them with any part of the financial results. Already, however, one company (the Bankers and Brokers') has notified its employés of a ten per cent. reduction of salaries. If they submit to this it will be their own fault. Let them stand up determinedly against any such reduction and it cannot be carried out. Better that the line should be closed at once, and those who are thus temporarily thrown out of employment supported for a time by the contributions of their more fortunate brethren, than that such a course should be permitted. If the B. & B. succeed in reducing salaries its example will be promptly imitated by the other companies, the Western Union included. The successful effort of the Franklin Company's operators has shown what telegraphers can accomplish when united and determined. This is a matter which concerns every telegrapher, and we call upon them, individually and collectively, to manifest their determination not to allow themselves to be assessed for a war tax in a fight in which they have no personal or pecuniary interest, other than that relating to their present certainly not exorbitant compensation.

To our Subscribers.

BETWEEN this time and the New Year a large number of subscriptions to THE TELEGRAPHER expire. We would call the attention of subscribers to the necessity of a prompt renewal of their subscriptions upon the receipt of notice of expiration, in order that they may not lose any numbers of the paper. The next year is going to be one of great interest, telegraphically, and a good telegraph

paper, such as we aim to make THE TELEGRAPHER, will be a necessity to every person interested in the business who desires to be posted relative thereto.

We would also suggest to the friends of the paper a renewed effort to not only maintain, but to increase and extend its circulation. A year's subscription would be a very acceptable Christmas or New Year's compliment to a telegraphic friend, and one which would weekly remind the recipient of the good will and kindness which inspired the gift. Let every telegrapher who reads these lines determine to make the New Year a happy one to the publisher and editor, by a substantial increase of the subscription lists of THE TELEGRAPHER.

Another Step in the Right Direction.

WE understand that negotiations are in progress, and arrangements nearly consummated, between the Pacific and Atlantic, the Franklin and some other competing telegraph companies, for a mutually advantageous and more satisfactory business connection than at present exists. It is understood that a joint office will be opened here by these companies, and that the Pacific and Atlantic Company will be represented in the offices of the Franklin Company in this city and elsewhere, and a division of the business made on routes occupied by both companies, so as to obviate any competition between them. It is not known as yet whether the Atlantic and Pacific Company will come into this arrangement.

The reputed consolidation of the Pacific and Atlantic and of the Franklin Companies is incorrect. Any movement for a unity of interests is, however, a step in that direction, and we regard the ultimate consolidation of all the competing companies as merely a question of time. The telegraphic contest which has been inaugurated is undoubtedly to be very severe and bitter, and the competing companies will need all the strength which a union of interests and means will give them to maintain themselves against the determined efforts of the Western Union Company to secure their failure and destruction. The only possibility of defeating the efforts to throw the business into the hands of the Government, is in the maintenance of reasonable competition. The interests of the public and of the telegraphers alike demand that there shall be no monopoly in the telegraph business in this country, either by Corporations or the Government. With competition the business will be better done and reasonable rates insured. We trust that the public will bear this in mind in the disposal of their patronage, and will see to it that no company is ruined and destroyed by the efforts of its rivals.

Messrs. Orton and Field's visit to England.

WE mentioned last week the sailing of President ORTON, of the Western Union Company, on the steamship Scotia, for Liverpool, but omitted to state that he was accompanied by Mr. CYRUS W. FIELD, of the Newfoundland and Atlantic Cable Company. We are informed that the object of these gentlemen is to complete negotiations for important European connections with the Cable Company and the Newfoundland and Western Union Companies, calculated to strengthen those companies and render their business more certain and profitable. These negotiations were in such shape as to be more advantageously conducted and completed abroad. We do not understand that the French Cable Company is included in these negotiations, although it may be found advisable to make some arrangement by which a conflict that would prove disastrous to the cable interests may be avoided.

Unreasonable.

A TOPEKA (Kansas) correspondent of the *Leavenworth Call* complains of the Western Union operator at that place, because he wouldn't stop the afternoon Associated Press report to enable him to send a special to the *Call*. Mr. J. A. HARD, the manager referred to, responds in a card, in which he shows the unreasonableness of the

correspondent, in blaming him for not doing what, under the regulations of the line, it was impossible for him to do, and caustically remarks: "It was evident that the gentleman was bilious from the moment he entered the office, as he was 'bile'-ing over with profanity, etc." We only refer to this case as a sample of the lack of sense and reason frequently exhibited by persons having occasion to use the telegraph, especially those enabled to ventilate their supposed grievances in print, in making charges and complaints which have no real or reasonable foundation.

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This favorite and wide awake magazine has made its appearance for January, with an enlargement of sixteen pages and a new dress throughout. The price has been advanced to two dollars per year, but the quality and variety of its contents have been enhanced in a much greater proportion. "A fearless exponent of good, and an uncompromising enemy of the bad, in our social life and economy," this magazine has deserved and achieved a brilliant success. By remitting \$5 to S. S. PACKARD, 937 Broadway, *Packard's Monthly* and any one of the \$4 magazines will be sent for one year.

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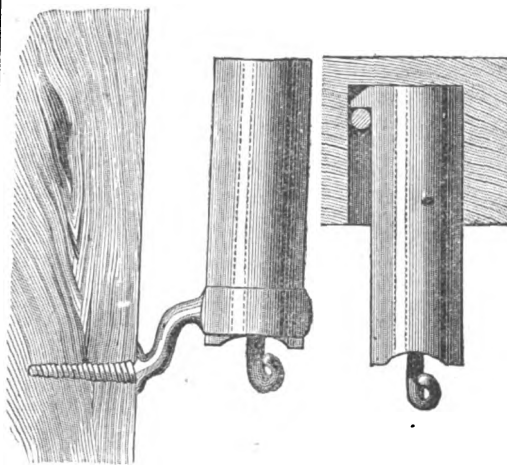
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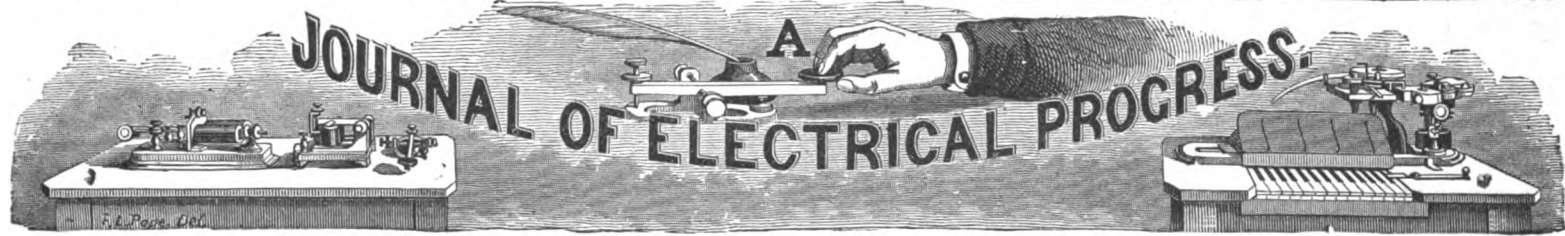
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THE TELEGRAPHY.



Vol. VI.—No. 18.

New York, Saturday, December 25, 1869.

Whole No. 180.

LITERATURE.

PARIS UNIVERSAL EXPOSITION, 1867.

Examination of the Telegraphic Apparatus and the Processes of Telegraphy, by SAMUEL F. B. MORSE, U. S. Commissioner. Washington, D. C.: Government Printing Office, 1869.

II.

IN the comparison of the speed of transmission by the different telegraphic systems now in use, the anxiety of Prof. Morse to properly set forth the merits of his own invention in this report has led him to some conclusions which we cannot but regard as inaccurate. He states that in France and Prussia the Morse instrument is officially rated at twenty to thirty messages per hour, and the Hughes printer at fifty messages per hour, each message being calculated as equivalent to twenty words; but, in the table given of the results reached by American operators in special trials, the minimum rate is 1,600 words per hour, which is equivalent to eighty messages of twenty words each; therefore, Prof. Morse claims that the speed of his own instrument has been greatly underrated in the official European reports, and that it is actually the most rapid system in use. It should be borne in mind, however, that the actual discrepancy between the skill of American and European operators, though very considerable, is much less than would at first sight appear from the above showing. The rate given in the official reports represents the average speed of good operators under favorable circumstances, while that of the American operators is the result of special trials of selected experts, which, as might be expected, give a very high average. A much nearer approximation to the true rate is that given by taking the average of a week's regular work in the New York office. This was done about two years since, and the result, as far as "through wires," or principal circuits are concerned, was as follows:

The Morse instrument transmitted, in a day of ten hours, an average of 300 messages of twenty words each, or thirty messages per hour.

The combination (improved Hughes) printer transmitted, per day of ten hours, an average of 325 messages of 20 words each, together with 4,000 words of press news, the whole being equivalent to 52 messages per hour. If the American lines were kept in as good working condition as those of Europe, these averages would undoubtedly be much higher, as may be proved by comparing the maximum speed per hour which has actually been obtained and officially verified:

The Morse apparatus in England, 1,476 words.
" " " " America, 2,704 "

The combination instrument, in the hands of an expert operator, has transmitted 2,700 words per hour through a circuit of 240 miles, a distance fairly representing the average length of circuits in this country. The Morse apparatus, as constructed and used in America, cannot be made to record with certainty over 1,800 words per hour, and this we consider to be about the average rate attainable in continuous work by the best American operator, under favorable conditions of the wires, while the rate of the combination printer, under similar conditions, is 25 or 30 per cent. higher. Singularly enough, Prof. Morse makes no allusion whatever to the latter instrument in his report, although it is practically the most rapid one in use at the present day.

A mass of valuable statistics is brought together in the latter part of the report, which want of space prevents us from quoting as fully as we could wish. From reports received from official sources, in reply to questions propounded by Prof. Morse, and addressed to the telegraphic administrations of foreign countries, it appears that the Morse instrument has almost entirely superseded every other one throughout the civilized world—as might be expected from its simplicity, economy and

effectiveness. The Hughes printer is considerably employed in Europe on important through lines, as the combination is in America, and for this class of work it possesses incontestable advantages. From the returns it appears that about 200 of the Hughes instruments were in use in Europe in 1867, the majority of these being in France. A careful estimate, based mostly upon official reports, puts the whole number of Morse instruments employed in Europe, Asia, Africa and Australia, in 1867, at nearly 12,000. In America, the Western Union Company report that they employ 4,000, and the various other lines cannot have less than 2,000 in daily use, including the railway lines and those of competing companies, as well as a large number in Canada, making a grand total of about 18,000 instruments of this kind in use at the present time.

Now that the long and bitter controversy, as to the credit which is really due to Prof. Morse for his various inventions and improvements, has almost entirely died away with the expiration of his patents and the consolidation of rival telegraphic interests, it may be well to impartially examine the claims of Prof. Morse, as set forth in this report, as well as in the little pamphlet published by himself in Paris, in 1867. The inventions or discoveries here claimed as his own by Prof. Morse may be briefly summed up as follows:

1. The recording or generic telegraph, operated either electro-magnetically or electro-chemically.
2. The telegraphic relay circuit, or the opening and closing of a secondary circuit by means of a primary circuit.
3. The dot and line alphabet.
4. The use of sounds as a medium of receiving telegraphic communications.
5. The system of automatic transmission by the use of metallic type, or of the embossed paper strip from the register, as a means of opening and closing the circuit.
6. The use of a printing wheel and ink as a mode of recording, generally known as the "ink writer."

It must be admitted by the unprejudiced reader that, in the report under consideration, Prof. Morse has, in most cases, brought forward sufficient and satisfactory evidence of his having been the inventor of the apparatus and devices above named. In regard to the electro-chemical system of recording, and the mode of transmission by the embossed paper strip from the register, although very probably first suggested by Prof. Morse, they do not appear by the evidence ever to have been put in practical form; and this fact, therefore, in our opinion, does not detract from the credit due to Bain, who made the electro-chemical system a practical reality, or from that of Edison and Westbrook, who, at a more recent date, independently invented and put in operation, unknown to each other, modes for transmitting by the embossed paper strip, which, although upon the same general principle, differ widely in the details of their construction.

The line of argument which has been adopted by some writers upon this subject—that of resolving the invention into its elementary parts, and showing that each detail was before known, and that, therefore, no credit was due to the man who combined them in such a manner as to produce a new result—is an exceedingly unfair one. Almost every great invention is a combination of devices previously well known, and, indeed, it is almost impossible that it should be otherwise. Although, in days gone by, during the excitement occasioned by the conflict of rival interests, there may have been a disposition on the part of Prof. Morse and his assignees to claim more than he was justly entitled to, yet it is manifestly proper, at the present time, that we consider the claims, as set forth by him in this work, in the light of the evidence alone, without reference to the unpleasant and bitter controversies which are happily fast passing into oblivion.

[From the *Anglo-American Times*.]

Bolton's Telegraph Code.

OF all countries the United States is most interested in the improvements of the telegraph. It matters not how cheapness is attained so that it be attained, and cheapness in telegraphy practically reduces itself to time. The post means weight; the telegraph time. By post the Government contracts to carry written or printed papers at a regulated rate of speed, at so much per ounce, while the difference in the telegraph is that the sender contracts with the owner of the line for its exclusive use during the period taken to transmit the message. The communicator then requires the monopoly of what may be an enormously costly machine, hence both to him and to its owner time is the very essence of the contract. Anything, therefore, which economizes this cheapens the telegraph, and enables the public more freely to use what must otherwise be too expensive for the masses. It is in ocean cables, or in the long lines traversing the North American Continent, that the benefit would be most felt. Whether the material and the mode of stretching the wire be improved, whether the instruments or the arrangement of messages, it matters not, so long as this object is achieved. The value is now very great of the lines laid throughout the world, and it cannot be affected favorably by any improvement in the material and laying. The brain of the inventor has been busy in perfecting the instrument, and now Major Bolton submits to the public a system of working a telegraph code through which as much can be done in an hour as in three or four by the alphabet at present in use. If Bolton's code can do for telegraphy what is asserted, the question naturally arises, why has it not been adopted? Those interested in existing arrangements, and who have the greatest power either in opposing or advancing a change of system, are certain in the first instance to be ranged in the van of the opposition. The cables now stretched across the Atlantic do not get work sufficient to occupy them, and the immediate effect of introducing the code would be a material reduction in that. It would be too much to expect the directors of these costly enterprises voluntarily to strip the shareholders of profits already limited enough; and this weighs not only with the great ocean cables but with the proprietors of the land lines, and even with the Government about to take charge of those of the United Kingdom. A reply to the inventor is, "Wait till we get choked with work;" and it is vain to retort that the true way to get work is by adopting such a code; for the proprietors are then placed in the position of having to stand the result of an experiment, which none willingly do. In the United States, however, such an objection has less force, the distances being great, the people scattered over the Continent, and their demand for full and late information imperious. If a small town rising in the waste can be amply supplied with news through one wire by means of Bolton's Code, whereas two wires would have failed to do the work without it, then the cost of a second line is saved to that town, and the gain to the United States in the course of a few years, in this way alone, would be enormous. As telegraphy is more freely used throughout this country than in any other (perhaps, indeed, than by the combined nations of the world), this code cannot fail to be of vast benefit. It will require all the space we can give to an article to describe it—therefore, while sketching the system, we will reserve details for our next number. The code substitutes figures for letters. Up to 5 the numerals are represented by dots, from 6 to 0 by dashes. Hence a dot means 1, a dash 6, a dot and dash 16, and so on. Nothing could be more simple than this, but codifying so as to make it applicable was the difficulty. The marvel is that what appeared so complicated was really capable of a simple solution. The book, when completed, will be divided into five parts: the

first will contain 210 signals, comprising the alphabet, marks for punctuation, and telegraphic signals to direct the operator, of which ten are expressed by one figure, a hundred by two, and another by three. Part II consists of 900 signals, limited to three figures, being the spelling code, so that any language having the Roman character can be spelt by syllables. Part III provides for 10,000 signals of four figures, of commercial and political intelligence, names of places, months, days, and words of frequent occurrence. Part IV contains the vocabulary and sentence code in 100,000 signals, limited to five figures. It comprises every word of the English language, alphabetically arranged, the sentences being selected from various message forms extracted from the best signal books. Part V provides for 127,000 signals, in six figures, expressing the known places of the world. As every page contains two columns each, of fifty signals, it follows that the book must consist of 2,382 pages, and its magnitude might frighten the uninitiated; but it is marvellous to observe the ease and simplicity with which messages can be codified by the sender and translated by the receiver. If the group consists of five figures it must belong to Part IV; if of three to part II. The first figure of Part III heads the page, the other two are among the numbers of the ninety-nine on that page. Where the group consists of five numerals, the other two are, as in the former case, to be found in the ninety-nine of that page. Thus a group of figures indicates the place in the book, and can be turned up more quickly than can a word in a dictionary. In transmitting messages relating to commerce, or the ordinary transactions of life, a single group alone is required. For instance, 1029 means "Advise us of state market;" 1068, "Market continues very quiet, and scarcely any business doing;" 0789, "You may draw on our account." One group may decline a verb, as, for instance, 1900 means "He cannot have," the noun is supplied by another group, "the apartments," "the credit," "the advance," anything. In the transmission of such messages the saving is enormous; but in reporting a speech, a letter, or the text of any document, the gain is less, although still great. Mr. Cyrus W. Field, among many of those best acquainted with telegraphy, asserts a saving of from half to four times, according to the nature of the message; that is, the speech would be sent in an hour which took two hours by the ordinary way; and a series of the usual messages, requiring five hours by the latter means, could be transmitted in one hour by Bolton's Code. A trial was made on a line between Birmingham and London, when 100 messages were despatched, averaging 12.86 words. By Morse's system they occupied 2 hours 12.25 minutes; by the code, 59.75 minutes. This point of speed being settled, the next regards accuracy. In the Birmingham trial the errors in the code were one per cent.; by the Morse system seven per cent.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, Dec. 23d.

TO THE EDITOR OF THE TELEGRAPHER.

CONGRESS has adjourned for the holidays, and fortunately without doing anything to damage the telegraph interests of the country. The reassembling of Congress, however, will be the signal for the gathering here of the impracticable schemers who desire to destroy the present telegraph system of the country, and build upon its ruins a monopoly which shall bring additional power, patronage and plunder to the party which may for the time be in temporary possession of the government. If a persistent exposure of these schemes and schemers can avail to prevent the consummation of these plans, their success shall not be the fault of your Washington correspondent.

I will sum up, as briefly as possible, the telegraphic features of the past week. That notorious lobbyist, bore and humbug, Colorado Jewett, has unfortunately turned his attention to the telegraph as a means of notoriety, and perhaps profit. His grant from the Netherlands Government, of a concession for a telegraph cable from the Hague to the United States, has already been mentioned. Armed with this concession the fellow forced his way into the White House, and succeeded in boring the President in his usual style. It was all along suspected that there was a large sized cat in that meal tub, and this week it came to light.

In the Senate, on Monday last, Mr. Pomeroy, of Kansas, introduced a bill to charter an American and Holland Ocean Cable Company, providing for direct telegraphic communication between Washington, New York, Holland, and Europe generally, under concession granted by the King of Holland to William Cornell Jewett. Referred to the Committee on Foreign Relations.

It provides that an association of American citizens, to be approved by the President, shall be incorporated under the above title, and authorized to land a cable within the jurisdiction of the United States. The company is authorized to issue twenty-year six per cent. bonds to the amount of \$10,000,000; said bonds to be deposited with the Treasurer of the United States, and reissued by him at specified times on requisition of the company; the Government to guarantee the payment of the interest on all the bonds. The Postmaster-General is empowered to contract with the company for the exclusive use by the Government of one wire from Washington to Holland, and the indebtedness thus incurred to be credited against possible payments of interest by the United States. The tariff rates for the public are to meet the approval of the President of the United States and the King of Holland.

It will be seen from this that Jewett proposes to lay his cable exclusively on the credit of the United States, and without the investment of any capital on the part of the projectors. It would seem to be a waste of time and space to argue the absurdity of this proposition. It is sufficient to say that there is not probably in the United States another person besides Colorado Jewett who would have the sublime impudence to present such a scheme to the Senate for consideration.

On Friday, Dec. 17th, the joint resolution relative to cable telegraphs between the United States and Foreign Countries, reported last session from the Committee on Foreign Affairs, provides that the United States shall enjoy the same privileges as any foreign government, relative to cables landed on our shores; that it shall at all times be entitled to use of the cables for transmission of messages to its agents abroad; that all companies, before landing their cables here, shall file, in the office of the Secretary of the State, a written acceptance of these conditions; and that the privileges conferred by the act shall not apply to any company whose cable terminates or extends in any country which does not grant equal privileges to any company incorporated in this country, was taken up.

A short debate followed; Mr. Sumner, as usual, exhibiting his special hostility to the French Cable Company, proposing an amendment providing that the provisions of the bill shall apply to companies that have heretofore landed cables in the United States, which, he said, he had prepared to meet the case of the French Cable Company, which was a monopoly.

The morning hour expiring the bill went over. It was again called up by Mr. Sumner on Tuesday last, and debated at considerable length. Various amendments were proposed, and such a difference of opinion developed, among the friends of the bill even, that the whole subject was finally recommitted to the Committee on Foreign Relations, which is the last of it at least for the present.

Senator Thurman, of Ohio, made some sensible remarks in the course of the debate, in opposition to the bill. He said the whole subject of cable connections and telegraphs should properly be referred to the treaty making power, which was the only way that the matter could be successfully dealt with and disposed of.

In mentioning Jewett's scheme I forgot to refer to a letter published by him, in which he, with characteristic modesty, protests against French and English interference to prevent the success of his Holland plan. The interference alluded to exists only in the imagination of the writer, and no such effort will be needed or exerted, in reference to any scheme of which he is the originator and manager.

Wednesday having, by mutual agreement, been assigned to Buncombe in the House—that is, to general speech making—Mr. Washburne, of Wisconsin, who evidently aspires to play the role of his burly brother, E. B. Washburne, now, happily for the other members of the House, banished to Paris, made a speech on the everlasting topic which his brother aforesaid used to harp upon, *ad nauseum*, the Postal Telegraph. His speech was merely a repetition of the assertions, exploded statistics and bosh which his brother has so often inflicted on the unfortunate members of the House and the columns of the Congressional Globe. The only matter of interest contained in it was the announcement of his intention to ask the House to appoint a select committee (of which, by parliamentary usage, he would himself be chairman,) to investigate the whole question of telegraphing, and to determine what the cost would be of connecting the telegraph with the postal system, and extending its usefulness to every section of the Union.

CAPITOL.

Changes on the O. C. & A. R. R.

CORRY, PA., Dec. 3d.

TO THE EDITOR OF THE TELEGRAPHER:

LATELY there have been some very important as well as pleasant changes on the O. C. & A. R. R., among which is the transfer of the general offices of the road from a one story frame building to that of a magnificent three story brick block, situated on the corner of Main street and First avenue. The occupants may well feel (as I doubt not they do) proud of their new quarters. More comfortable rooms could not be found in Western Pennsylvania than those occupied by the officers of the road. To describe the different rooms and their several advantages would trespass too much upon the columns of THE TELEGRAPHER, I will therefore speak only of such changes as pertain to telegraph matters. Heretofore there have been two train despatchers along the line of the road—one located at Corry, the other at Oil city. Mr. H. Dwyer attended to the duties of that office between Corry and Petroleum Centre, while Mr. J. J. Hendricks kept trains O. K. between Petroleum Centre and Iron. But the train despatcher's office for the whole line has now been permanently located at Corry. Messrs. Dwyer and Hendricks still retain the management of the trains from this office, which is located on the third floor, facing Main street. Most of the principal wires passing through Corry have been run into this office, and are intended to be attached to a Cuijgan switch board. Mr. J. A. Vaughan, who has been operator in despatcher's office at Oil city, still retains that office, and without intending any flattery, a better man could not be found to fill that office.

Business is very brisk at this point and demands the services of a good man, and we know "Jim" will make things move O. K., if a possible thing. Mr. J. W. N. Gills, who was for the past year or more operator in Superintendent's office, has been transferred to "D" office, where other duties in addition to telegraphing will be assigned him. Mr. A. Gay has resigned his position at Gray's Mills, and accepted a situation on the Lake Shore and Michigan Southern Railroad. Mr. J. D. Bristol, who has been sick for some time past, resumed his duties a few days since. Mr. L. C. Kinsey, late assistant train despatcher, has received the appointment of Superintendent's clerk.

IXION.

The Telegraph at the Capitol.

WASHINGTON, D. C., Dec. 19th.

TO THE EDITOR OF THE TELEGRAPHER.

TELEGRAPH matters in the capitol and about the city is so well represented by the frequent letters of "Capitol," that it is hardly necessary for me to try to give any further particulars as to what is going on here. "Capitol" seems to be better posted, as regards matters at the capitol, than many of the knowing ones. Telegraphically, local matters are dull.

Mr. Geo. C. Maynard, manager Western Union "Cw." office, has been confined to his room for some time past on account of inflammatory rheumatism; Mr. D. Moreau filling Mr. Maynard's place as all night man at the main office.

The Bankers and Brokers' Co. will open a branch office to-morrow in the lobby of the Senate, for the accommodation of their customers and the public generally. The Western Union Co. have decided to extend their line to the Potomac Ferry wharf, foot of Seventh street. This has long been needed, and no doubt will pay well for the outlay.

SPRING.

No War Tax on Telegraph Employees.

BALTIMORE, MD., Dec. 17th.

TO THE EDITOR OF THE TELEGRAPHER.

In almost every city, town and hamlet, from the Atlantic to the Pacific, and from the St. Lawrence to the Gulf, the telegraphers respond heartily and cordially to the united sentiment and feeling which now animated the hearts of the profession; and the columns of our excellent paper bear constant evidence of the fraternal sentiment which is now so closely uniting us together.

In this good work the Baltimore telegraphers do not desire to be lost sight of. We have all joined hands, hearts and minds together, to promote the cause and welfare of the profession.

There never has been heretofore a time when the telegraphers of America were so generally united to secure respect, and a position for the profession second to none. Baltimore re-echoes to her brother operators the advice given by other correspondents in our paper to stand firm; and let us act with discretion, but also unitedly and firmly, to secure the best interests of all.

From all that I can hear, I think that the telegraphers are determined not to submit to any reduction of salaries.

as a consequence of the contest now going on between the Western Union and competing companies. If corporations, in their efforts to ruin and destroy each other, are disposed to reduce rates to such an extent as to make telegraphing a losing business, that is no reason why the over-worked, but certainly not over-paid, operators should shoulder any part of the burden of loss. For myself, I respond no! to any such demands, and hope that there is sufficient stamina among telegraphers generally to prevent the enforcement of any such demands.

Before closing, I wish to impress upon every operator throughout the country the importance, at this juncture, of perfect harmony and union among us. We are not likely to over-estimate our own importance, but let us act unitedly, and any attempt to assess this war tax upon the employes must fail. Whenever the crisis shall come let us meet it like brave and determined men.

Aside from this matter of the telegraph contest, and its possible effect upon the compensation of employes, there is nothing of special interest transpiring here just now.

DN.

TO CORRESPONDENTS.

OCCIDENTAL.—Can procure the volumes of THE TELEGRAPHER mentioned, but it will take a little time, and expense would be from \$25 to \$30. There is only one Telegraphing Life Insurance Association now. Formerly there were two, but the one established by the National Telegraphic Union was ordered disbanded at the last annual convention. The one you belong to is still continued.

F. X.—Your screed is on file, and will print it as soon as more important matters will permit.

PERSONALS.

Mr. H. T. BROWN, formerly R. R. clerk and operator at Stirling Junction, Mass., has resigned, and gone to Albany.

Mr. L. E. BATHERICK, who left the service some time ago, has been appointed operator and R. R. clerk at Winchendon, Mass.

Mr. BUTLER, formerly operator at Winchendon, has left, to engage in other business.

Mr. G. M. SMILEY has accepted a position as manager of the Western Union Company's office at Stirling Junction, Mass.

Mr. NATHAN TANDY, formerly assistant operator at Athol, Mass., has been appointed operator and R. R. clerk at Grout's Corner, Mass., vice C. R. RICHARDS, discharged.

Miss ALICE WHEELER has resigned her position as operator at Erving, Mass., and **Miss NELLIE HUNT** takes charge of the office.

Mr. J. MARLIN, formerly of "Cg" Mich. Central R. R. Telegraph office, is engaged in the Western Union office at Memphis, Tenn.

Mr. W. M. GOODWIN, after an absence of some years, has returned to his first love, and accepted the management of Hamilton, Ont., depot office, G. W. R. The friends of "Kee" will be glad to hear of his whereabouts.

Mr. C. H. PARENT, formerly of the Union Pacific and Western Union offices at Bitter Creek, W. T., has accepted a position with the People's Telegraph Company at Montreal, to receive French press reports.

THE TELEGRAPH.

International Telegraph Company.

A MEETING of Directors of the International Telegraph Company was held yesterday at the Falmouth Hotel. Col. E. K. Harding, of Bath, resigned the position of President, and Mr. E. C. Bailey, of Boston, was elected in his place. Gen. F. S. Hersey, of Bangor, was elected Vice-President. A semi-annual dividend of three per cent. was declared, payable January 15, 1870. The following gentlemen were present: E. K. Harding, Bath; E. C. Bailey, Boston; S. F. Hersey, Bangor; W. McGilvery, Searsport; Israel Washburne, Jr., G. F. Shepley, Woodbury Davis, H. P. Wood, Portland—*Portland Press*, 16th.

FALL RIVER has a system of fire alarm telegraph, which was successfully tested on Saturday last, and will shortly be put in regular operation.

The shore end of the cable connecting England with the French-Atlantic cable has been landed in France.

The Minister of War of France is about to unite together all the barracks and guard-houses in Paris by telegraphic wires.

The German-American Telegraph.

THE arrangements in respect to the German-American telegraph cable, referred to last week, is the concession from the North German Confederation of all the telegrams for America not otherwise expressly directed by the sender to be sent by some other route, as well as the right to carry German and English messages, will be effected by a German-English company shortly to be formed. The concession has been purchased for this new company, but not by the Anglo-American Company. The caution money (100,000 thalers) has been deposited, and the necessary contracts and arrangements are being made. A thin wire cable is to be laid from North Germany to Lowestoft, two conductors to be used for German-English messages, and the third exclusively for German-American messages. This wire is to be connected with one of the Anglo-American wires from Telegraph street to the United States, which is agreed to be appropriated, but not exclusively, for the transmission of German-American correspondence. The messages will be sent in the order of reception at the terminal and intermediate stations, as required by the International Telegraph Convention. The Anglo-American and Newfoundland Companies are to give a rebate to the German Company, on messages passing through the new cable and the Atlantic lines, but the chief source of revenue of the new company is expected to be the German-English traffic, which has increased enormously of late years. The Act of Parliament passed last session specially excepted from the Postmaster-General's monopoly telegrams to and from foreign countries.

Western Union Extension.

Mr. T. P. COOK, the manager of the Western Union Telegraph Company, returned the night before last from a trip out West. Mr. Cook has been nearly to Denver City, where he has been engaged in putting on workmen, and making all the necessary arrangements for extending the telegraph line to Denver. Communications by telegraph will be opened to that city by spring. Mr. Cook started East yesterday, on business connected with the company.—*Lawrence (Kansas) Republican Journal*.

American Cable Across the Atlantic.

A TELEGRAM was received from Lisbon yesterday that the Hon. David Chambers, W. E. Prince, S. P. Rockwell and J. H. Mooney, having got authority in this State to organize a new cable company, had just been granted the right to rest the European terminus of the line at the Azores. The despatch came from a committee of two sent abroad to try and secure that right. The management of this cable will be wholly under the control of our own citizens.—*N. Y. Sun*.

Telegraphs to and in the Far East.

THE Russian government has granted a concession of thirty years to M. Titgen, Counsellor of State to the King of Denmark, M. Ericsson, a merchant, and M. Palisen, Consul-General for that country at St. Petersburg, for the establishment of submarine telegraphic lines between Asiatic Russia and Osaka, Yokohama or Nagasaki, in Japan, and Shanghai, Fou-djon and Hong Kong, in China. The company thus formed will ask for the authorization of the Chinese and Japanese governments, and the Russian executive will lend its good offices in the matter. The concessionaires bind themselves to attach this system of telegraphy to a station and telegraph line of the State in Russia in Asia.—*Galignani's Messenger*.

Origin and Progress of the Telegraph System.

WE have received from our friend, Mr. HENRY O'REILLY, a copy of a letter prepared by him for the Hon. CHARLES P. DALY, President of the American Geographical and Statistical Society, of this city, and read by Judge DALY to the Society, giving a brief statement concerning the commencement of Telegraphic Intercommunication between the Atlantic Coast and the Mississippi Valley, from which we make the following interesting extracts. As one of the earliest pioneers of the telegraph in this country, and the organizer and constructor of many thousand miles of telegraph line, Mr. O'REILLY's reminiscences are always interesting and important; and he has done more, probably, than any other person to record and preserve, as well as to make telegraphic history. We make the following interesting extracts from this letter:

The Pioneer Lightning Line between St. Louis and the Atlantic Coast (including the intermediate cities of Harrisburg, Pittsburg, Wheeling, Columbus, Dayton, Cincinnati, Madison, Louisville, Vincennes, &c.), was the first division of the range of eight thousand miles of telegraph which I projected, constructed and organized, for connecting the different sections of the United States, as they then existed—which was the earliest great range of telegraph in the world.

This Pioneer Line was the first long telegraph used by scientific men for geographical and astronomical purposes—Prof. Mitchell, of Cincinnati, thus instantaneously communicating with the scientists of the seaboard, and over this line was transmitted the first Presidential message (Polk's long one of 1847), which was published simultaneously among the people of the Atlantic coast and of the Mississippi Valley.

The progress of intercommunication among all civilized people and nations, as well as in the United States, cannot be more vividly realized than by considering the development of railways and telegraphs during the short period since telegrams first flashed between St. Louis and the Atlantic cities—the longest electric line then in existence. At that time (December, 1847) there were no locomotives west of Chambersburg, in Pennsylvania—not a rail on the great route between the Alleghenies and the Pacific Ocean. Between the then railroad terminus and the Mississippi the common roads in winter and spring were mostly in such wretched condition that the mails, then always irregular, were frequently fourteen or fifteen days in transmission—a state of things which rendered telegraphic intercourse valuable to an extent that cannot be realized in these days, when steam and lightning are so wonderfully diffused that our newspapers supply intelligence only a few hours old from nearly all parts of the civilized world.

New Patents.

For the week ending Dec. 21, and bearing that date.

No. 71,624, dated December 3d, 1867; reissue, 3,772.—**ELECTRIC CLOCK.** The Kennedy Electric Clock Company of New York, N. Y., assignees of Samuel A. Kennedy, S. W. Holt and Joseph Gerlach.

We claim, 1. Vibrating a pendulum having a magnet attached thereto, by means of two electric coils, arranged one at each end of the magnet, the said magnet and coils having their corresponding poles placed opposite to each other, as shown and described.

2. Actuating the driving pawl of clock mechanism, by a weight moved from a state of rest to a certain distance, and retracted by its own gravity.

3. Carrying the weighted pawl driver intermittently to its point of limitation, and then leaving it to the action of gravity, by means of an oscillating pendulum, in the manner set forth.

4. The combination of the ratchet wheel E with the pendulum H, by means of the lever F, forked bar G, and pawl I, arranged and operating in relation to each other, substantially as described and for the purposes specified.

Recent British Patents.

Provisional Protection for Six Months.

No. 3,196.—**HENRY WILDE**, Manchester. Improvements in the construction and working of electric telegraphs.

No. 3,308.—**JOSEPH OPPENHEIMER**, Manchester. Improvements in fixing and staying telegraph posts.

No. 3,324. **CAMILLE FAURE**, 67 Strand, London. Improvements in galvanic batteries.

Invention protected for six months, on deposit of competent specifications.

No. 3,378.—**HENRI ADRIEN BONNEVILLE**, 10 Sackville Street, Piccadilly, London. Improvements in electric batteries.

BORN.

CALLAHAN.—At Brooklyn, N. Y., December 15th, to E. A. CALLAHAN, Superintendent of the Gold and Stock Telegraph Company, a son.

MARRIED.

BLAKE.—HEYWOOD.—December 2d, at Greenfield, Mass., E. B. BLAKE, Manager of the Western Union Telegraph office at Greenfield, and Miss Clara Heywood, of the same place.

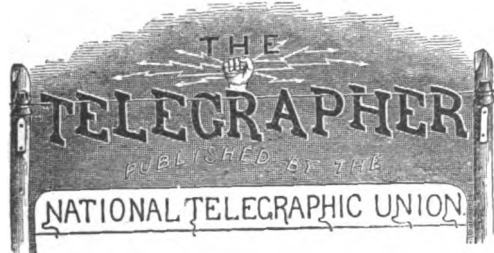
GORDON.—CLARK.—At Baltimore, Dec. 14th, Mr. JOHN H. GORDON, operator in the Fire Alarm Telegraph office, to Miss AMANDA J. CLARK, of Baltimore.

DIED.

BROPHY.—At Titusville, Pa., Thursday afternoon, Dec. 16th, 1869, by an accidental explosion of nitro-glycerine, PATRICK HENRY BROPHY, agent of the Roberts Nitro-Glycerine Torpedo Co., and formerly a telegraph line constructor and repairer for the Western Union Telegraph Co., aged 25 years.

HUNT.—At Cleveland, Ohio, Dec. 10th, 1869, Ev. HUNT, aged 15 years and eight months.

POLHAMUS.—At his residence, on 83d street, Wednesday evening, Dec. 1th, EDWARD POLHAMUS, telegraph operator at police headquarters, of congestion of the lungs.



SATURDAY, DECEMBER 25, 1869.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.
 Vice-President. W. O. LEWIS....New York.
 Treasurer.....A. L. WHIPPLE....Box 39 P. O., Albany, N. Y.
 Recording Sec. W. W. BURHANS....Box 60 P. O., New York.
 Corres. Sec....F. L. POPE....Box 6010 P. O., N. Y.

WHY IS IT?

THE Western Union official organ, in some remarks upon the *status* of telegraph operators in England and America, says of operators in this country:

"Men of character and skill are valued, and, as far as possible, encouraged. A process of alienation between employers and employed is our greatest evil and danger. Anonymous abuse, however feeble and ridiculous, is degenerating and vicious. The generosity, the gladness, the cooperation, the enthusiasm of the service in former years has been lowered by evident causes. We have watched it, and the process has been depressing. Men, of course, will growl, put them wherever even they desire. Superintendents are not always above the temptations of authority, and now and then hurt where they might guide. Wherever men are found human weakness will show itself. We, however, hope for better days, unless a cut-throat war imperils the compensation of labor. A lean treasury makes a bitter executive. The men who have urged opposition and challenged war will find no tears in our eyes if they find themselves fed from a ungilded spoon."

It is true, as our contemporary states, that "the generosity, the gladness, the cooperation, the enthusiasm of the service in former years has been lowered by evident causes." We think it is safe to say that there is very little, if any, of these left, and the causes are certainly evident. One of the principal causes of the change may be found in the fact that the character of the service and the treatment of the employes is not what it was in former times. This was, perhaps, inevitable, when the business should attain its present colossal proportions, and the employers and employed should cease to have any personal knowledge of or interest in each other—but it is not the less to be regretted. When our friend, the editor of the official organ, the lamented LOVETT, and others whom we could name, were superintendents, they were deservedly popular with those who labored under their direction, because they treated them with that regard for their feelings and interests which they deserved. They were not only the superintendents but the *friends* of those over whom they were placed. Their visits to the offices were frequent, and were looked forward to with pleasure by all parties. How is it now? The Western Union superintendents are made mere clerks to revise office returns and promulgate the vermillion edicts of their superiors. Many of the offices are never visited by the superintendents, who have but little, if any, personal acquaintance with the operators. In fact, the time of the superintendents is so much occupied with the onerous clerical duties imposed upon them, that but little opportunity is afforded them for anything else.

Formerly, such a thing as deduction of salary for temporary sickness, especially if the employe's duties were gratuitously performed by his associates, was unknown. Now it is the inflexible rule that any absence from duty shall entail a forfeiture of pay. Again, when telegraph companies were poorer, every employe—if he had served

faithfully, and desired it—was accorded, at some convenient season during the year, a vacation of one to two weeks without deduction of salary. Now, if vacations are allowed at all, the employe must either supply a substitute or his pay is stopped for the time lost.

Again, when telegraph companies operated only over a limited territory, the stockholders, or at least the principal ones, were known to the employes, and frequently manifested an active interest not only in the business but in those by whom it was conducted. Now that the wires span the continent, and the capital is reckoned by tens of millions, and the stock is daily transferred from one to another on the Stock Exchange, this personal acquaintance and interest is impossible.

We might go on and fill a page of this paper with the evident causes for the lowering of the "gladness, enthusiasm, cooperation," etc., of former days, but what we have already set forth will suffice. The employes know the company for which they work only as a hard task-master, necessarily, it may be claimed, exacting from them the utmost labor for the smallest compensation possible, and yearly imposing upon them more onerous conditions of service. Their only intercourse with their immediate superintendent is the frequent receipt of copies of new orders promulgated from headquarters, imposing new duties, or still further restricting their compensation and privileges. Under such circumstances, when they find that zeal, intelligence and diligence in the discharge of their duties are unrecognized and unrewarded, how can they otherwise regard themselves than as hired servants, who must render a certain amount of service for a certain compensation, or feel any especial interest in the welfare of the huge corporation for which they labor?

As to the threat of a reduction of compensation, as the consequence of the cut-throat competition now being inaugurated, we fancy the operators will have something to say on that subject. They have had no hand in inaugurating this fight, and, if we understand them aright, do not intend to be taxed on any line to defray the expenses. If any telegraph company cannot sustain itself in the contest without reducing salaries, it must go to the wall. Reduction of rates and cheap telegraphing (neither of which THE TELEGRAPHER has ever favored) are doubtless very pleasing to the public, but they cannot be maintained at the expense of the employes.

We do not desire that the treasury of any telegraph company should be lean. On the contrary, while we favor competition, and recognize the fact that in some form it is unavoidable, until some method can be discovered for cheapening prices, without reducing the employes to the *status* of the underpaid and poverty stricken English telegraphers, it should be devoted to establishing more certain and reliable communication, and an improvement in the general administration of the business of the telegraph.

Christmas and New Year.

THE festive season is with us. The day of publication of THE TELEGRAPHER this year falls upon both the Christmas and New Year anniversaries. We heartily extend to all our readers the compliments of the season, and trust that they may all find their Christmas merry and their New Year a happy one.

The practice of giving Christmas and New Year's gifts is one of the most popular and pleasing features of these anniversaries, and we trust will be no less honored than heretofore. In considering what would prove a suitable and gratifying compliment of the season to a friend engaged in the telegraphic profession, we can suggest nothing better calculated to gratify and please them than a year's subscription to THE TELEGRAPHER. It will be a compliment which will, throughout the year and not merely for a few days, remind the recipient of the friendly interest of the giver; and in such a gift the gratification will also be afforded of contributing to the support of the organ of the profession, in the maintenance of which every practical telegrapher is or should be interested.

A Liberal Advertiser.

LIBERAL and judicious advertising never fails to reap its reward. Of this fact the well known firm of L. G. TILLOTSON & Co. are well convinced, and their faith is shown by their works, as will be seen from the Supplement to this week's paper, setting forth the telegraph equipment, material and supplies which they are constantly and largely supplying to those having occasion to purchase and use them.

The excellence of TILLOTSON's workmanship is too well known to require any commendation at our hands, and in prices he does not allow himself to be undersold by any person or firm in the business. Superior quality and workmanship, fair dealing and liberal advertising, have built up for this firm, from a small beginning, a business of which they are justly proud.

A Seasonable Present.

A FEW copies of the *Modern Practice of the Electric Telegraph*, second edition, can yet be obtained, and we would suggest to those about to make Christmas and New Year's presents that, next to a year's subscription to THE TELEGRAPHER, a copy of this valuable work would prove highly acceptable to a friend interested in, or desirous of becoming acquainted with the telegraph business. A few copies have been published on extra paper, and with handsome binding, which will be forwarded to any address, post-paid, on the receipt of two dollars.

The regular edition is still supplied at the original price, one dollar and fifty cents. Send your orders at once to the publisher of THE TELEGRAPHER, so that the book may reach the party intended to be complimented by New Year's day.

Fatal Accident.

MR. JEAN JOURDAN, an employe of the Western Union Telegraph Company in St. Louis, fell from a sixth story window in the telegraph building, Tuesday morning last, and was instantly killed. He fell a distance of eighty feet.

In Memoriam.

MR. PATRICK H. BROPHY, whose death, from accidental explosion of nitro-glycerine at Titusville, Pa., is announced in this paper, was for a number of years a repairer for the Western Union Telegraph Company, and built the greater portion of the lines belonging to that company throughout the oil country. About seven months ago he resigned his position at Titusville, and engaged in the explosion of torpedoes in oil wells, for the Ballantine Torpedo Co., in that vicinity. Such was his caution and judgment that he soon became noted as one of the most careful and successful operators of nitro-glycerine and other destructibles. Last September he, in company with James F. Hughes and the writer of this, safely conducted by water a large quantity of nitro-glycerine, etc., from Titusville to Parkersburg, W. Va., of which mention was made in a late number of THE TELEGRAPHER. In October an injunction was issued by the Supreme Court of this place, restraining the Ballantine Co. from making further application of torpedoes to oil wells. Mr. Brophy at once returned to Titusville, and accepted employment with the Roberts Co. A part of his duties was the supervision of the magazine (located one mile from the city) and the possession of its keys. On the day that he met his untimely end he had gone alone to the magazine, for what object is unknown, but it is reasonably supposed for the purpose of thawing out for immediate use a small quantity of nitro-glycerine, which congeals at a temperature of 45 degs., and is by experts considered explosive at 115. The magazine contained upwards of 7,000 lbs. of nitro-glycerine, only a small portion of which is thought to have ignited, but so terrific was the explosion that the body of Mr. Brophy was torn to atoms, and the report distinctly heard for a distance of ten miles. Much damage was done to windows and buildings in Titusville. Those in the immediate vicinity of the scene of the accident were levelled to the ground.

Mr. Brophy bore an irreproachable character for integrity, decision and honor. He was possessed of a courage that often approached rashness, and although frequently warned of the danger of the hazardous business he was engaged in, he seemed to fear it not.

He was a member of the Chapter of Royal Arch Masons at Titusville, and diligently observed all the principles and tenets of the order.

Alas! what a terrible blow to his sorrow-stricken wife, parents, sisters and brothers. May our Heavenly Father sustain and strengthen them in this their hour of bereavement. May they be consoled in the knowledge that he died a Christian, and his tragic death is lamented and mourned for by friends who dearly loved him.

'Green be the turf around thee,
 Friend of my happiest days,
 None knew thee but to love thee,
 None saw thee but to praise.
 Tears fell, when thou wert dead,
 From eyes unused to weep,
 And long where thou art lying,
 Will tears thy memory keep.

M. A. McCoy.

Pittsburg, Pa., Dec. 17th.

SPECIAL NOTICE.

GRAY & BARTON,

MANUFACTURERS FOR

THE AMERICAN PRIVATE LINE TELEGRAPH COMPANY,

Be glad to announce to their friends and patrons that they have removed their Chicago works to No. 13 LA SALLE ST., and have added thereto a fine selection of New Machinery and Tools, especially adapted to the manufacture of Telegraph and Electrical Instruments.

Our Machinery will be of the latest and most improved designs, and special advantages have been secured for furnishing instruments of the pattern of the Caton and Western Union shops, the high reputation of which will not suffer at our hands.

We call the attention of all interested in the working of Telegraph Lines to the fact that we make first class Relays, with a resistance not exceeding from six to twelve miles, and make no main line magnets with high resistance, except to order.

Hereafter all our Relays will have the resistance, accurately measured, marked on the base of the instrument.

The liberal share of patronage which has been accorded to us during the past year has encouraged us to provide more extensive facilities for the accommodation of our trade, and we are prepared to fill orders for Instruments and all kinds of supplies at brief notice.

AMERICAN

COMPOUND TELEGRAPH LINE WIRE.

COPPER FOR CONDUCTIVITY.

STEEL FOR STRENGTH.

The superiority of the COMPOUND TELEGRAPH WIRE, compared with iron, consists in its LIGHTNESS, reducing by over fifty per cent. the number of poles and insulators required;

Relative TENSILE STRENGTH, homogeneity and elasticity—decreasing the liability to breakage from cold weather, sleet, etc.;

CONDUCTIVITY—insuring great improvement in the working of lines in any condition of the weather;

And in its DURABILITY, which greatly exceeds that of the best galvanized iron wire;

Altogether resulting in a very great reduction in the cost of maintaining and working telegraph lines, while, at the same time, insuring

EFFICIENCY AND RELIABILITY.

Address—

American Compound Telegraph Wire Co.,

ALANSON OARY, Treasurer,

No. 234 West 29th St.,

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L. G. TILLOTSON & CO.,

11 DEY STREET.

THE TELEGRAPHER.

VOLUME FIVE, BOUND.

A few Bound Copies of VOLUME FIVE of THE TELEGRAPHER are for sale by the Publisher. These Volumes are Handsomely and Substantially Bound in Half Turkey Binding, and will be sold at Five Dollars each.

Persons having complete sets of Volume Five, well preserved, can exchange them for Bound Copies on payment of Three Dollars.

THE METROPOLITAN
TELEGRAPH COMPANY,
OF NEW YORK CITY.

Incorporated January 15, 1869.

CAPITAL STOCK, --- \$1,000,000.
10,000 SHARES, AT \$100 EACH.

EXECUTIVE OFFICE, 22 Broad St., Room 11.

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Vice-President.....WILLIAM E. HOY.
Secretary.....WILLIAM B. DINSMORE, Jr.
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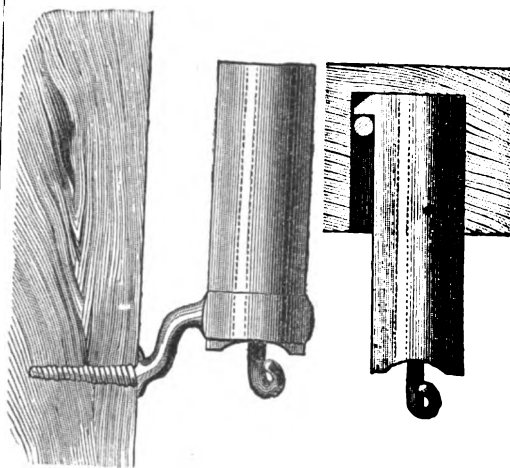
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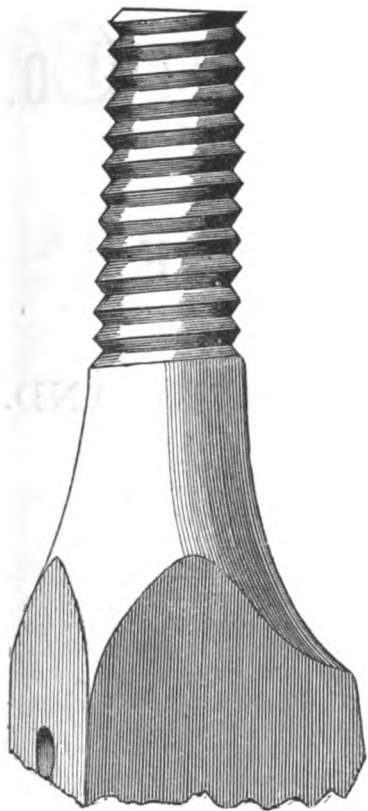
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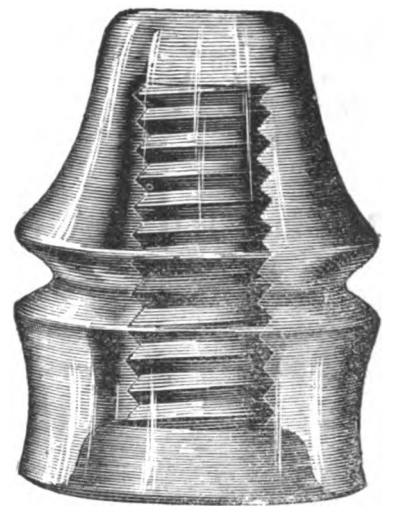
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THE

IMPROVED

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SCREW INSULATOR.

DISPENSING WITH THE USUAL MODE OF FASTENING WITH CEMENT.

This arrangement, as shown by the accompanying Cut, is a great improvement.

We are prepared to furnish the Insulator, with or without Brackets or Top-pins to match, in any quantity that may be required.

L. G. TILLOTSON & CO.,

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Railway and Telegraph Supplies of every description.

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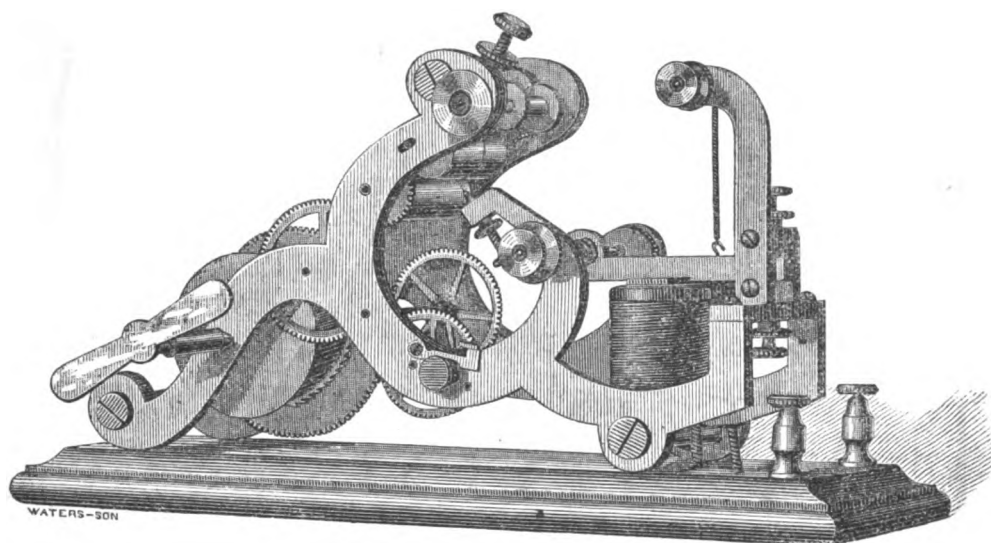
The American Compound Telegraph Wire Co.

IMPORTERS AND SOLE AGENTS IN THIS COUNTRY FOR

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Manufactured by the Celebrated Wire Drawers,

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TELEGRAPH CABLES, OFFICE WIRES, &c.

MANUFACTURERS OF THE JONES PATENT LOCK SWITCH BOARD,

AND EVERY VARIETY OF TELEGRAPHIC INSTRUMENTS,

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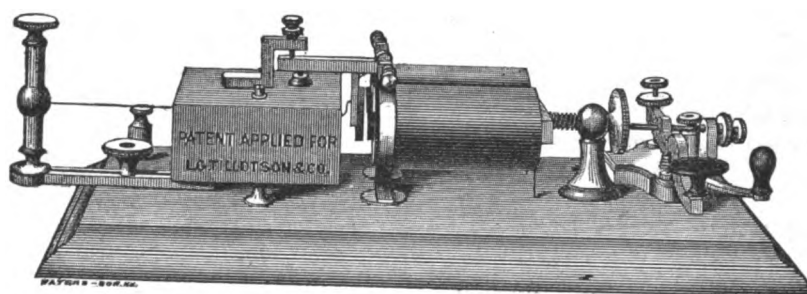
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**Quicksilver, Insulators, Brackets, Cross Arms,
TOP PINS, RUBBER HOOKS,
And every known article pertaining to Telegraphy.**



Improved Combination Main Line Instrument.

CATALOGUES, PRICE LISTS, &c., FURNISHED UPON APPLICATION.

For the information of parties at a distance, who may be unacquainted with our style of work, we append a few of the many Testimonials which have kindly been forwarded us by prominent Telegraphic gentlemen, regretting that we have not space for all at this time.

From the Father of Telegraphy.

New York, Nov. 25th, 1869.

Messrs. L. G. Tillotson & Co.:

Sir: I have carefully examined the beautiful Telegraphic Instruments purchased of you some time since, and am happy to assure you that, in point of workmanship, they compare favorably, in all essential particulars, with the best Morse Apparatus, using the steel stylus (or penile rock), which I have seen in Europe. I am just preparing to send your beautifully constructed instruments to the Philosophical Rooms, Phillips' Academy, Andover.

With kind wishes for your success,

Yours ob't serv't,

I am't H. B. Morse.

From the Sup't Erie Railway Telegraph.

"I take pleasure in stating that the work which we have received from your establishment is substantial in make and tasteful in design.

"W. J. HOLMES, Sup't."

From the Sup't of the Gold and Stock Tel. Co., N. Y.

"The Printing Instruments, Relays, Keys and Sounders used by this Company, of your manufacture, give entire satisfaction. I have no hesitation in pronouncing them superior to any we have in use.

"H. A. CALAHAN, Sup't."

From Sup't Southern Minnesota R. R. Telegraph.

"I beg leave to express my satisfaction with the work I have had from your firm, and the manner in which my orders have been executed. On Friday last, during a wet snow storm, I worked twenty-two miles of your Compound Wire, with four of your No. 2 Relays in circuit, on one cup of Carbon Battery (which had not been changed for four days), and got a very good current.

"J. M. NYE, Sup't."

From Sup't St. Louis, Vandalia and Terre Haute R. R. Telegraph.

"The material, both Wire and Instruments, furnished us have given entire satisfaction, and cannot be excelled in either quality or workmanship. Please accept our thanks for the prompt manner in which you have filled our orders. Your Relays cannot be excelled. I have tested them in all kinds of weather, and they have not failed to work. You have filled our orders so much to our satisfaction that we shall purchase the entire outfit for our line, 165 miles, at your establishment. Your Premium Registers are the best I could find either east or west.

"W. S. PUTNAM, Sup't."

From Sup't Lake Shore Railway Telegraph.

"The English Wire which you sent me is the best I have ever used. I have superintended personally the construction of the line on which this wire was used

and have seen every inch of it unreel. It is the toughest wire my repairer has ever handled, and he is an experienced and practical man. The Registers are the finest finished and work the smoothest of any I have ever used. The Sounders are very handsome and work splendidly. I can say truly that all instruments and supplies received from your establishment thus far have given untire satisfaction in every respect.

"H. W. STAGER, Sup't."

From Sup't Buffalo and Erie R. R. Telegraph.

"With an experience of sixteen years in the Telegraph business, I have never seen any work surpassing yours. Instruments ordered from you three years ago are still in use on the line, and during that time have worked well, through storms and sunshine, and have not had a cent's worth of repairs put on them.

"J. DESMOND, Sup't."

From M. L. Wood, Late Gen'l Sup't A. & P. Telegraph Co.

"Permit me to congratulate you on the remarkable success attained by your establishment in the manufacture of Telegraph Instruments and equipments of the various kinds. The fact that, among the large number of instruments and equipments furnished the A. & P. Co. during the year past, not a single instance of imperfection of manufacture or unsatisfactory action has come to my notice, leads me to bear unqualified testimony to the high standard to which you have attained in this branch of your business."

From Sup't Southern Pacific and Atlantic Telegraph Co.

"The Combination Instrument came to hand yesterday. I tried it on my Cincinnati and Memphis circuit, via Nashville, 660 miles direct, and it performed satisfactorily.

"F. M. SPEED."

From Sup't Tel., Del. and Hudson Canal Co.

"Allow me to state that all instruments and materials received from your establishment have always proven to be of superior workmanship, and reliable in every respect.

"CHAS. PETERSEN, Sup't."

From Sup't International Ocean Telegraph Co.

"I am happy to say that the work from your establishment has given every satisfaction on this line. The best evidence of this is that we continue to purchase of you. Wishing you success, and hoping all your customers may be as well satisfied, I am yours truly,

"W. H. HEISS, Gen'l Sup't."

From Sup't Tel., Baltimore and Ohio R. R.

"Permit me to express my entire satisfaction with the Instruments, &c., from your manufactory, which I have been using to considerable extent during the past three years. The workmanship and finish is all that can be desired by the most fastidious.

"A. G. DAVIS, Sup't."

From Sup't Tel., Cleveland, Painesville and Ashtabula R. R.

"The Main Line Sounders are a perfect success, and answer our purpose admirably. We have four in our new freight house, and get along better than we could with locals. The Switch Boards furnished us give entire satisfaction, and are the finest finished I have seen. All our supplies come in good condition, and are as good as can be had. I sincerely hope you will be handsomely sustained by the telegraph community as long as you furnish such material as you do now.

"T. H. MILES, Sup't."

From Sup't Tel., Blassburg, Corning and Tioga R. R.

"The Relay Magnets, Sounders, Keys, and general supplies purchased of you from time to time, have given entire satisfaction, and I take pleasure in recommending them to all persons purchasing supplies.

"G. R. BROWN, Supt."

BLISS, TILLOTSON & CO.,

171 South Clark Street, Chicago.

From Philadelphia and Erie R. R.

"I am just in receipt of your three new Relay Magnets sent us. They work well, and are the best piece of workmanship in that line I have ever seen.

"A. B. SPOONER, Division Operator."

From Sup't Tel., Central R. R. of N. J.

"I deem it due to you to say that, in my judgment, you have given the telegraph the best Instruments manufactured. The Wire Insulators and other material we have had from you have always been of superior quality, and have never failed to give satisfaction.

"J. L. MINGLE, Sup't"

From Mobile and Ohio R. R.

"I have been using Instruments of your manufacture, and find them much superior to others in use on the line, of which there are many patterns, more especially your Relays.

"F. G. MOFFETT, Chief Operator."

From Sup't Tel., Morris and Essex R. R.

"I am happy to state that the work received from you has given satisfaction.

"RICHARD O'BRIEN, Sup't"

From Sup't Tel., Del., Lack. and Western R. R.

"I have always found your Instruments to give good satisfaction, and can cheerfully recommend them as first class, in every respect.

"G. BOGERT, Sup't."

From C. S. Jones, Inventor of the Jones Lock Switch.

"The Combination Instrument is the best thing of the kind I have ever seen, and is all you claim for it."

From S. C. Bishop, Cable Manufacturer.

"This Johnson Wire is splendid—not a break in the whole cable."

From Chester, Partrick & Co.

"There are parties who manufacture wire who are offering no inducements for our business, but as we have tested your wire, and, so far, find it good, we are willing and should like to buy exclusively from you."

We have many others of similar import, from parties who do not wish publicity given to their expressions of preference.

We respectfully refer to

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GEN. ANSON STAGER,	Gen'l Sup't W. U. Tel. Co.
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" MARSHALL LEFFERTS,	" " " "
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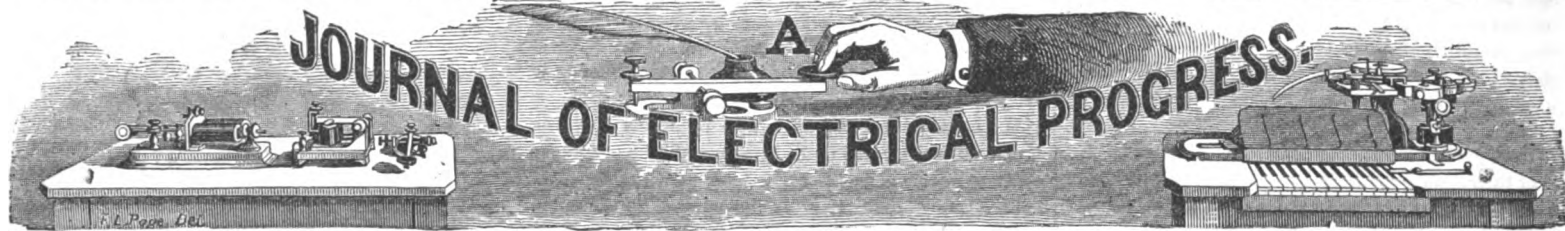
AND HOSTS OF OTHERS.

BUT OUR WORK IS OUR BEST RECOMMENDATION.

L. G. TILLOTSON & CO.,

11 Dey Street, New York.

THE TELEGRAPHER.



Vol. VI.—No. 19.

New York, Saturday, January 1, 1870.

Whole No. 181.

THE BISHOP GUTTA PERCHA WORKS.

GUTTA PERCHA is one of the most valuable substances discovered of late years. The manifold uses to which this gum is applied are well known. As an insulation for telegraph wires it is practically perfect, and as its valuable insulating properties have been demonstrated by practical application and use, it has become almost the only substance used for that purpose in submarine and subterranean lines, and is the principal insulating substance applied to office wires and to air lines, where a complete insulation of the wire is requisite.

The insulating properties of Gutta Percha, and its valuable qualities as a practical non-conductor of electricity, became known almost simultaneously with the discovery of the usefulness of the substance itself.

As early as 1846 efforts were made on quite a large scale to apply it to this purpose, and in 1847 several hundred miles of wire insulated with it were laid in Prussia. So well known were the insulating properties of Gutta Percha, that several applications to the Patent Office for letters patent for covering wire with it were rejected, upon the ground that its use to protect wires, &c., was not a patentable invention. While the use of Gutta Percha itself, as an insulating or non-conducting substance, was not patentable, the invention of machinery for that purpose was of the highest importance, and in the BISHOP Gutta Percha Works, owned and operated by Mr. SAMUEL C. BISHOP, at Nos. 422, 424 and 426 East Twenty-fifth street, this machinery has, after nearly twenty years' experiment, and the expenditure of very large sums of money, been brought practically to perfection.

Mr. BISHOP, the well known proprietor of the BISHOP Gutta Percha Works, has been connected with Gutta Percha manufacturing from its earliest introduction in this country, in 1848. In 1851 he commenced the insulation of telegraph wires by the use of Gutta Percha. At first he was associated with another party in the enterprise, but this connection was soon dissolved, and he individually continued the business. Subsequently, in 1862, the BISHOP Gutta Percha Company was organized (under New York Statutes), and the business was transferred to this Company, of which Mr. S. C. BISHOP has always been the manager. Recently the business has reverted to Mr. BISHOP again individually, and is now very successfully conducted by him at the factory in East Twenty-fifth street.

In 1853 Mr. BISHOP established his factory in White street, in this city, where he continued the business for two years, and until his establishment was entirely destroyed by fire. He at once obtained accommodations for the establishment of his business in the Empire Works on East Twenty-fifth street. His old enemy—fire—still pursued him, and his factory was again damaged, but the works were not so effectually destroyed as at the White street establishment. It should be remarked, however, in this connection, that these fires were from outside causes, unconnected with the Gutta Percha Works, which was obliged to suffer from its vicinity to

destructive conflagrations. In neither of the different localities and premises occupied by Mr. BISHOP has a fire occurred in or from the Gutta Percha Works.

The factory at present occupied was built in 1863 expressly for Mr. BISHOP, and arranged for the Gutta Percha business, and has been fully and exclusively occupied for that purpose since that time. The building, which is perfectly adapted to the purpose for which it was constructed, occupies three lots of ground on East Twenty-fifth street, and is 60 by 90 feet, three stories and basement—the lots having a frontage of 75, with a depth of 100 feet.

In the passage way between the Gutta Percha Works and the next building is a tank $8\frac{1}{2}$ feet deep by 13 feet wide and 85 feet long, for storing manufactured cable. In the rear of the building there is another very large tank, used for testing cables, with all the necessary arrangements for that purpose.

The basement of the building is thrown into a single large room, in the rear part of which is a fine steam engine of about 50 horse power, which drives the machinery of the entire establishment; the boiler is immediately in the rear of the engine, and outside of the main building, an arrangement which affords greater security in case of accident.

The wire employed in armoring the cables is received in coils, through an opening from the street, into the front part of the basement, where it is stored until it is required for use. Various sizes of iron wire are made use of for this purpose, the particular gauge adopted in each case depending in a great measure upon the nature of the dangers to which the finished cable, when laid, will be exposed. None but the best wire is used in this establishment.

Upon one side of the basement floor is a row of forges, which are used for welding the ends of the consecutive lengths of wire. After this operation is completed the wire is passed through a machine, technically known as a "straightener," which consists of a number of small iron pulleys, so arranged in relation to each other that the wire, in passing between them, is bent back and forth a number of times, in a zig-zag form. This operation inevitably detects any weak points that may chance to exist in the wire, and also destroys its elasticity, causing it to become "killed," as it is termed, which renders it much more pliable under the various operations to which it is destined to be subjected.

From the basement story a vertical elevator, worked by the steam engine, is employed in transporting material to any other floor of the building where it may be required; an indispensable convenience in an establishment of this kind.

The office of the establishment is located on the first floor, with an entrance directly from the street. In the rear of the office, on the same floor, a large room extends the entire length of the building. Most of the heavier machinery employed for the various processes is placed in this room. Here, also, may be seen the process of refining and preparing the crude Gutta Percha, to render it fit for the purposes for which it is finally intended. The

process of manufacture will perhaps be more clearly understood by the reader if we trace the raw material through the various transformations which it undergoes before becoming available as an insulating coating for telegraphic conductors.

The crude Gutta Percha reaches the factory in variously shaped masses of irregular size, just as it was made up by the natives in the forests of the tropics. Sometimes it is formed into rude images of men and animals, which are often of a somewhat amusing appearance. In this condition quantities of sticks, leaves, dirt and stones are incorporated with the material, and the first process is to separate these from the Gutta Percha itself. This is effected by means of a heavy iron disc, which revolves with great rapidity, and which has knives inserted into it, operating much upon the same principle as a carpenter's plane. A mass of crude Gutta Percha held against this is rapidly transformed into fine thin shavings, which are thrown into a tank of cold water, containing machinery arranged in exactly the same manner as the "rag engine" of a paper mill. The mixture is continually carried around a circle, passing each time between revolving knives, which eventually convert the mass into a sort of pulp, in which condition the Gutta Percha separates itself from all foreign impurities. After the material has become thoroughly purified it is transferred to another tank, the water in which is kept at a high temperature by means of steam pipes, which softens the Gutta Percha and converts it into a mass of the consistency of stiff dough. This is passed a great number of times between heavy iron rollers heated by steam, by means of which it becomes thoroughly kneaded and of uniform consistency throughout. While undergoing this operation a loud crackling is continually heard, as the "dough" passes between the rollers, which is caused by the bursting of air cells which have been accidentally formed within the mass. Another set of rollers, of somewhat similar construction, is employed to roll the Gutta Percha into thin sheets, which are used for wires and covering submarine cable, and also for various other purposes in the arts.

In the immediate vicinity of the above apparatus are three machines, which are employed for the purpose of covering wire with Gutta Percha and for making Gutta Percha pipe. They consist of a strong hollow iron cylinder, which is heated by a steam jacket, in order to keep the material in a soft and plastic condition, so as to be readily moulded into any desired shape. One end of this cylinder is arranged for the insertion of dies, which are of various sizes and forms, according to the particular sort of work which it may be desired to produce. A mass of Gutta Percha, having been previously softened by heat, is placed in one of these cylinders, and a plunger or "ram" is forced in behind it by means of a hydraulic pump, which exerts a powerful pressure upon the ram, forcing the Gutta Percha out through the die at the opposite end. When a Gutta Percha pipe is to be produced a die with an annular opening is made use of; but when a wire is to be covered the die used has merely a circular opening, corresponding in size to the outer diameter of the covered wire. The wire itself entering from behind,

passes through the centre of this opening, and emerges therefrom covered with a coating of Gutta Percha, whose thickness corresponds to the difference in diameter between the wire itself and the aperture in the dye. The wire thus covered is technically known as a "core," and passes immediately into a long trough filled with cold water, which causes the covering to become hardened in a few minutes, and it is then coiled upon large drums ready for use.

Wires intended for submarine cable conductors receive two or three, and sometimes even a greater number of distinct coatings of Gutta Percha, put on in the manner just described. The object of this is that any little imperfection existing in one coat, at any particular point, will be covered by the next coat. Thus, the chance of a flaw occurring at the same point, in two or three successive and distinct coatings, amounts to an impossibility. The wires used for office connections, and other similar purposes, are covered with a single coating, as, in such cases, a slight imperfection is a matter of trifling consequence.

All covered wires and cables manufactured at this establishment are, however, tested with a delicate galvanometer while passing through the water trough, and are also again tested in the coils or on the reels when finished. In this way any imperfection cannot fail to be discovered, and the wires and cables sent out from the factory can be relied upon as being perfectly insulated.

The next process in the manufacture of a submarine cable, after the core has been completed and wound upon a reel, as above described, consists in covering the core with a "bedding" of tarred banding and of hemp or jute, which serves the purpose of preventing the core from being injured by the armor, and also adds to the flexibility of the cable. This is laid on by means of a frame carrying a number of bobbins containing the strands of bedding, and which revolves around the core, the latter being made to pass through an opening in the centre of the frame. By this means the core is completely covered with bedding, laid on spirally, each bobbin contributing a single strand or web, and is then ready for the armoring machines.

These machines are two in number, and are arranged upon a general plan, somewhat similar to that of the machine last described. The larger one is provided with sixteen spools or bobbins, upon which the armor wires are wound. When the machine is in operation these revolve around the core, which is constantly passing through, and by the combination of the two movements the wires are laid around the core in a long spiral. This operation completes the cable, which is either coiled away in a tank or upon a large reel, ready for shipment. In addition to the above is another machine for armoring light cables, which is constructed upon the plan of those used in English manufactories.

On the same floor with the above machinery is an ingenious apparatus for covering core with a continuous lead coating, an idea which is original with this establishment. Wire covered in this manner is found very useful for many purposes. For burglar alarm telegraphs, subterranean lines and other analogous purposes, it is especially valuable. The process of covering the core with lead is the same in principle as that previously described, where the wire is covered with Gutta Percha. In order, however, to force solid cold lead through a die in this manner an immense pressure is required, and this is obtained by means of a massively constructed hydraulic arrangement, which exerts a pressure of about eight tons per square inch upon the metal with the greatest apparent ease. The lead is supplied to the machine in the form of cylindrical slugs. A small furnace close at hand is used in melting lead, for the purpose of casting these slugs.

In addition to the above described machinery a number of lathes and other tools, for making and repairing machines, are located upon the same floor.

Upon the second floor are a number of interesting

and curious machines for covering office wire with braided and woven coverings of various kinds, which it is not possible to describe in a detailed manner, so that the principle of their construction and operation could be understood. There are a considerable number of these machines, and by their use all the different varieties of office wire and electric cordage familiar to every telegrapher are produced with great rapidity. This method of covering office wire by means of woven cordage was originated in the Bishop establishment, by the assistant foreman, and is carried on with great perfection. One variety recently introduced is designed especially for out-door use, being provided with a double covering and saturated with a patented mixture, of Bishop's invention, that improves its insulating qualities, and at the same time secures it against the effects of exposure to moisture and atmospheric effects. Some varieties have a single coating of Gutta Percha, which is afterwards covered in the manner referred to.

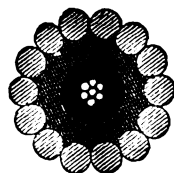
The third story is occupied as a store room and work room, and contains three very large reels, which fully occupy almost one entire side of the building. These reels are used for putting wires on to dry when first insulated, preparatory to covering them with a second or third coating, and also for drying cordage which has been covered with Bishop's compound. These reels are very useful. In this room is also kept quantities of smaller sizes of cable and insulated wires on reels, ready for cutting and shipping.

In addition to his telegraphic manufactures Mr. Bishop also turns out, at his very complete establishment, large quantities of tissue sheet, such as is used in the manufacture of hats and caps, together with water pipes, chemical vessels, and in fact Gutta Percha goods of every description.

Altogether the BISHOP GUTTA PERCHA WORKS may be fairly considered a model establishment, as it is the only one of the kind in this country.

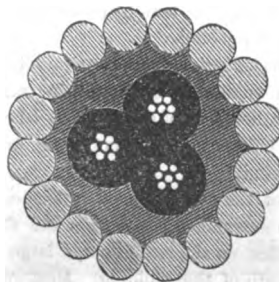
In addition to the manufacture of insulated wire and cables, a variety of articles are made at this establishment from Gutta Percha, such as bottles, pitchers, &c., for holding acid, which are indispensable in the battery room, and in the arts and sciences.

As a matter of interest to those who have occasion to use telegraph cables, and to the telegraphers generally, we print herewith illustrations of some of the cables manufactured at the BISHOP GUTTA PERCHA WORKS, with a brief description of the same.



ONE CONDUCTOR CABLE.

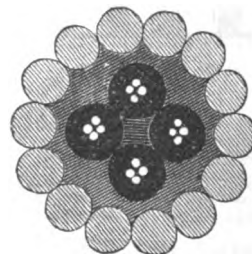
Seven No. 19 copper wires twisted, and insulated with pure gutta percha, 3-8 in. diameter, with bedding of woven banding and tarred hemp, and armor of 14 No. 7 galvanized iron wires, spirally laid. Weighs 5,850 lbs. to the mile.



THREE CONDUCTOR CABLE.

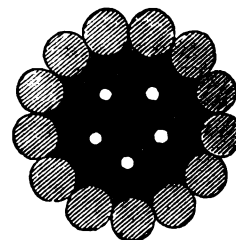
Each seven No. 19 copper wires twisted, and insulated with pure gutta percha, 3-8 in. diameter, with bedding of woven banding and hemp tarred, and armor of 16 No. 3

galvanized iron wires, spirally laid. Weighs 15,100 lbs. to the mile.



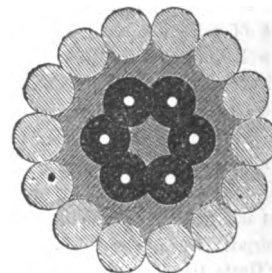
FOUR CONDUCTOR CABLE.

Each four No. 19 copper wires twisted, and insulated with pure gutta percha, 5-16 in. diameter, with bedding of woven banding and tarred hemp, and armor of 14 No. 3 galvanized iron wires, spirally laid. Weighs 12,715 lbs. to the mile.



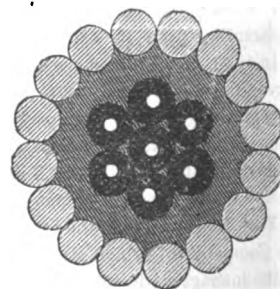
FIVE CONDUCTOR CABLE.

Each one No. 14 copper wire insulated with pure gutta percha, 1-4 in. diameter, with bedding of woven banding and tarred hemp, and armor of 13 No. 3 galvanized iron wires, spirally laid. Weighs 12,000 lbs. to the mile.



SIX CONDUCTOR CABLE.

Each one No. 14 copper wire insulated with pure gutta percha, 1-4 in. diameter, with bedding of woven banding and tarred hemp, and armor of 14 No. 3 galvanized iron wires, laid up spirally. Weighs 13,000 lbs. to the mile.



SEVEN CONDUCTOR CABLE.

Each one No. 14 copper wire insulated with pure gutta percha, 1-4 in. diameter, with bedding of woven banding and tarred hemp, and armor of 16 No. 3 galvanized iron wires. Weighs 15,056 lbs. to the mile.

The above are only a few of the different styles of cable manufactured by Mr. BISHOP; and, in addition to the standard styles, he makes them of any desired style or pattern to order.

Mr. BISHOP has always maintained the most friendly relations with his employes, and as a consequence his work is always performed in a satisfactory manner. He has always aimed to treat those employed by him with justice, recognizing and suitably rewarding talent, faithfulness and industry. His establishment is, and has been

for the last four years, worked on the eight hour system, and he states that, after this prolonged trial, he is satisfied that it is most advantageous to both parties. At times, as during the late war, to meet an emergency, and execute work urgently required by the Government, he has been obliged to run his establishment day and night—and in such cases he employs relays of workmen, so that none were obliged to labor more than was beneficial to them.

As an evidence of the kindly feeling existing between Mr. BISHOP and his employes, we might refer to a very pleasant New Year's compliment to the former, made on the 1st of January, 1866. A Committee of the employes of the BISHOP GUTTA PERCHA WORKS waited upon Mr. BISHOP at his residence, and presented him with a handsome silver pitcher, with an inscription that it was presented to him "for being the Inaugurator of the Eight Hour System of Labor in the United States."

At a collation, to which the Committee was invited, after briefly referring to the regard and friendship manifested for him, and thanking them for their gift, Mr. BISHOP said:

"And now, my friends, one word about the Eight Hour System, of which you have been pleased to call me 'the originator.' In this city we were the first to put it to practical test in our factory, and I believe (except to talk of it) we were 'the originators' in fact; and we have not had any reason to regret its adoption: and we shall continue it, whether Congress makes it a law or not. As a matter of right and justice to the working man there can be no doubt about it; and, as a matter of policy for the employer, it is equally clear."

"Why then should the only real producers in the country—the strictly laboring men—the bone and sinew of the nation—the men to whom the country is indebted for its life as a nation, and to whom it will be indebted for the maintenance of its financial integrity, and for the means to pay off the large national debt incurred for war purposes—why should they be obliged to devote twenty-five per cent. more of their time to labor than any other class in the community—why, except that labor has not had its fair share of representation and influence in the community with capital, and has had to submit to any rules the employer might establish?"

"This should not be so. Capital and labor should go hand in hand, as they are essential to each other. But a brighter day is dawning for the real aristocracy—the laborer, the mechanic, the artisan, the bone and muscle of the country. An enlightened community are at work for you, and will demand for you right, justice and humanity."

In conclusion we would state, for the information of those who may have business with Mr. BISHOP, that his office is at the factory, where he may always be found from eight o'clock A. M. to four-thirty P. M., where all parties who wish to investigate the cables and other articles manufactured by him will be welcomed.

Messrs. L. G. TILLOTSON & Co., No. 11 Dey street, and BLISS, TILLOTSON & Co., of Chicago, Ill., are General Agents for the sale of telegraph cables and wires; as also Mr. JOHN THORNTON, No. 503 Chestnut street, Philadelphia, Pa., who sells all kinds of Gutta Percha goods made at the BISHOP GUTTA PERCHA WORKS.

Special agents in New York city for BISHOP's Gutta Percha goods, except telegraph cable and insulated wires, A. D. & C. A. HODGMANS, 201 Broadway.

Army Telegraph Reminiscences.

BY AGITATOR.

V.

On the morning of the 5th of April, 1862, a telegraph operator stood upon the hurricane deck of a stern-wheeler steamer, which was slowly steaming its way up the Tennessee river. The morning was bright and beautiful, and our friend was drinking in the fresh, bracing air, and leisurely surveying the changing scenery along the shores, when a young man about his own age (27) approached with a "good morning, sir."

The stranger's gentlemanly mien and honest air inspired confidence. Rheumatism had made sad work with one of his limbs, which being three or four inches shorter than its mate, compelled the wearing of an iron extension on the sole of one diminutive foot. With the assistance of a cane walking was by no means difficult,

but on a forced march the stranger would undoubtedly prove deficient.

"Good morning, sir," responded our operator. "A fine morning this?"

"Yes, beautiful, and a fine stream of water we are moping over in this old scow."

"Very slow boat, sir; never saw a stern-wheeler that could make very fast time. I would like to get up there, where our gallant army is bivouacked, near Savannah, if possible, before they get at it. They must fight or run pretty soon that's certain."

"Yes, so I understand. Telegraph despatches say that the Confederates, under Albert Sidney Johnson and Beauregard, are pretty close on to our boys. I have been operating in the telegraph office at Paducah for some time past, and we got some pretty exciting reports from Nashville last night about——"

"What! Are you a telegrapher? Give us your hand; say it again. What's your name? Where are you going? Where did you get aboard?"

Our friend would have asked a dozen more questions in the same breath, had he not been silenced by the stranger's cry of pain and the exclamation, "hold on."

"Yes, I'm a telegrapher. My name's Parker; going to report to General Grant at Savannah; got aboard at Paducah; don't see anything very wonderful in this, and don't see why you should try to grip a fellow's hand off, if he is a telegraph operator."

Well, I'll be dog-goned (a vulgarity our friend picked up out in Missouri) if 'taint funny. Parker, you're in just my fix exactly. I'm an operator, with orders to report to General Grant; I got aboard at Cairo; been out in Missouri with Fremont; was just this moment wishing that I had the company of a whole souled, jovial telegraph operator, for this trip, and here you pop your head right up above deck, and make for me straight, as though my very thoughts and desires were understood and answered. Dog-gone it, Parker, I never was so glad to meet a feller in all my life."

It is needless to say that these glad feelings were reciprocal, and two happier hearts than theirs was not on that boat during the remainder of the passage. Perfect strangers—each bound on the same mission, and each supposing himself the only telegrapher aboard, it was peculiarly gratifying to meet and become acquainted.

The boat arrived at Savannah at three A. M. on the morning of the 6th (Sunday). At the first break of day heavy artillery firing could be distinctly heard at Pittsburg Landing, nine miles above. Our friends reported for duty, but there being no line yet completed to Nashville, there was nothing for them to do. General Grant ordered his headquarters steamer, the Tigress, to steam up, and himself and staff went aboard to proceed to the scene of conflict. The operators' request that they be allowed to accompany them was granted, and they too took passage. The boat was pressed to her utmost speed and soon arrived at the landing. The battle of Shiloh was now (nine A. M.) raging with great fierceness. The thundering of artillery, and continuous rattle of musketry, came rolling over the hills to the ears of those at the river with awful distinctness, especially to those who had never before heard these sounds. Our friends were of this number, and it became a debatable point with them whether they should remain on the boat or ascend the bluffs and approach nearer the line of battle. It was finally agreed that they must see as well as hear, and after much wading in mud across the river bottoms, and much climbing of hills, they stood upon the high bluffs of the river. Here their eyesights were in a measure gratified. The wounded limping away to the rear, with their guns or a stick for a support; ambulances going hither and thither, filled with those poor fellows who were so badly hurt as to be unable to hobble away themselves; excited officers, with drawn swords or revolvers, endeavoring to rally those who, with pale, frightened countenances, were skulking and feigning sickness. They looked sick, but had the enemy, instead of their own brave comrades, who were now standing up like men in the extreme front, been wavering and falling back, their faces probably would have shown a different color.

Parker and his companion were several times during the day in sight of the line of battle, where the bullets whistled musically, but becoming weary, finally retired to the verge of the bluff overlooking the river, and sat down to rest. Our troops, presenting a semicircular front, were being slowly pressed in towards the river, and it was feared would be obliged to surrender before dark. About five P. M., for about thirty minutes, there came a sudden, complete cessation of the noises of the battle. Not a cannon's roar or a musket shot broke the silence. What could it mean? Had General Grant surrendered? Suddenly from the second range of hills, and as if by magic, the guns of both contending armies opened with deafening roar. The half hour's silence was now explained. Our troops during this time were falling back

and changing their whole front. Simultaneously with the opening of this fierce cannonade some 3,000 or 4,000 white feathered skulkers jumped up from their hiding places in the woods, and came tearing down the sides of the bluffs like a flock of sheep. Our two friends were at the time on their way down to the boat, and were in danger of being overwhelmed and trampled to death by the frightened mass. A large brush heap was only reached in time to save their necks. The compact tide of human beings was obliged to split and flank this obstacle, leaving the operators unharmed.

Many a good laugh was afterwards indulged in the expense of our friends. Whenever they attempted to tell the story their companions would pervert it by saying that Confederate lead had a tendency to make men get behind something, but they thought a brush heap a poor breastwork.

The Neutrality of Ocean Cables.

THE following letter of instructions has been prepared by the Secretary of State, and forwarded to our ministers and diplomatic agents abroad, relative to the establishment of neutrality of ocean telegraph cables.

The status of the French cable, and the numerous propositions of new cables, have demonstrated the urgent necessity of securing by joint convention some definite international arrangement on the subject from all the maritime powers.

DEPARTMENT OF STATE,
WASHINGTON, Nov. 18, 1869.

SIR: The President thinks the present moment favorable for the negotiation of a joint convention, by the maritime powers of the world, for the protection of submarine cables. The United States have a peculiar interest in fostering the construction of these indispensable avenues of intelligence, and in protecting them against wanton injury. Its domains extend from ocean to ocean, and its commerce plies at regular intervals alike from the ports of the Atlantic and of the Pacific to the ports of Europe and of Asia. Its citizens on the shores of both oceans are in constant communication with each other across the Continent, both by the rail and the telegraph. This central position in the commerce of the world entitles the United States to initiate this movement for the common benefit of the commerce and the civilization of all. The features which the President desires to incorporate into the proposed convention are:

First.—Suitable provisions for the protection of such cable lines, in time of peace and of war, against wilful or wanton destruction or injury. We have seen, during the present year, the submarine cable connecting Cuba with the United States severed, and communication through it interrupted. The President proposes to prevent similar destruction and injury hereafter, by a joint declaration that such acts shall be deemed to be acts of piracy, and punished as such.

Second.—Suitable provisions to encourage the future construction of such lines. Experience has already shown that the assumption, by one nation, to control the connections with the shores of another, will lead to complications that may, unless arranged, result in preventing all direct telegraphic communication between the two countries. The President deems that this can be best prevented in future by providing that hereafter no exclusive concession shall be made without the joint action of the two governments whose shores are to be connected. In this way the capital of both countries will be enlisted, and at the same time possible causes of difference will be removed.

Third.—Provisions against scrutiny of messages by Government officials. The President thinks that the right to establish such a scrutiny in favor of the Power controlling either end of the cable is calculated to lead to trouble, and had, therefore, better be prevented.

A draft of a convention embodying these points has been prepared, and is herewith enclosed. It will be understood, however, that this is submitted simply as a basis for future discussion, should the leading powers concur with the United States in considering the subject one for international consideration and jurisdiction. The President desires that the representatives at Washington of Great Britain, France, Portugal, Spain, Italy, North Germany, Austria, Russia, Belgium, Holland, Sweden and Norway, Denmark, Turkey, Greece, Venezuela, Brazil, the Argentine Confederation, Colombia, Bolivia, Peru, Ecuador and Chili, may be empowered to enter jointly and simultaneously into negotiations with the United States and with each other, with a view of concluding a joint convention for the purposes heretofore referred to, and instructions identical with these are issued to the representatives of the United States at each of those powers. You will, upon the receipt of this, propose to the cabinet of — to give to its Minister at Washington powers to enter into such negotiations with the United States, and with the representatives of such other powers as may be empowered for that purpose, and to conclude

with them such a joint convention; and you are at liberty, in your discretion, to furnish to the Minister of Foreign Affairs a copy of these instructions and their inclosure. I am, sir, very respectfully, your obedient servant,
HAMILTON FISH, Secretary of State.

The draft of the convention which accompanies the foregoing instructions simply puts in treaty form the suggestions thus presented for the consideration of other powers.

A Bold Step Forward.

THE government of the United States is already identified in history with a large number of the most important advances ever made in international law. Its earnest effort to do away with all plunder at sea, by establishing the broad principle that private property shall be respected in war as in peace, has made a deep impression in Europe, and the time is probably not distant when it will succeed. Without waiting for that, however, President Grant and Secretary Fish have taken advantage of the sudden prominence which ocean telegraphs are now assuming among the communications of the world, to propose a convention among all civilized nations, by which those cables shall be protected from injury in war as in peace, and all wilful destruction of them shall be treated as piracy.

A form of convention for this purpose, prepared by our Department of State, was sent, under date of November 18, to all our ministers near foreign courts, with instructions to ask that the representatives of those powers at Washington be authorized to enter jointly into negotiations with the United States upon this basis. Several answers, it is said, have already been received—all of them favorable to the general principles of the convention. Its objects are to secure the co-operation of all the powers in recognizing and enforcing the neutrality of the cables; in encouraging the construction of new lines, and in exempting messages from scrutiny by agents of any government.

If these objects can be attained, and these rules established as a part of international law, it is scarcely too much to say that more will thus be done to prevent war than by all the work of all the peace societies of this century. Indeed, it can only be attained by admitting principles which, if carried out to their logical results, would make war almost impossible; for there is nothing in an ocean cable, except the incidental fact that it is harder to repair or restore it, to distinguish it from other telegraph lines, or, indeed, from other means of communication between nations. Let it once be understood that the free interchange of knowledge and ideas between people is not to be interrupted because of war between their rulers, and the free interchange of other things could not long be prevented. Not only half the misery and evil of war will disappear, but more than half of the means and motives for carrying it on. The next step would seem to be, not so much the partial disarmament of which there have been so many rumors in Europe this year, but the disbanding of all soldiers; the declaration that war itself shall be piracy, and the establishment of some method for settling international differences by law instead of force.

The more complete and beneficial the results which seem to be implied in an agreement like this, the less reason there is to be sanguine of its speedy accomplishment. Yet it is safe to say that if the people of Christendom could decide such a question without dictation from rulers whose interests are not theirs, it would be decided at once, and on the side of undisturbed trade and permanent peace. The military monarchs of Europe, whose power is bound up with the existence of vast armies, are felt every day more and more to be a mere incubus on civilization, a barrier to the true progress of men; and the present rapid decline of personal government in France, the most advanced nation of them all, can scarcely fail to be regarded as a plain notice to military despots elsewhere that they will soon have to yield much to advancing freedom and peace, or to give way before them.
—N. Y. Evening Post.

Washburne's Postal Telegraph Bill.

THE bill which Mr. C. C. Washburne, of Wisconsin, announced his intention of presenting to the House of Representatives, at an early day after its reassembling, is published, and the following is a synopsis of its provisions:

The first section makes it unlawful, after the 24th day of July, 1871, for any person, other than such as are authorized in this act, to transmit by electric telegraph, or by any device equivalent thereto, any message, information or intelligence, of whatever description, for hire, or to receive any moneys or reward of any kind for such transmission.

The second section provides for the appointment by the Postmaster-General of two appraisers, who, in con-

nection with two other appraisers, to be appointed by the telegraph companies interested, and a fifth, appointed by the four first named, shall, between July 1st and December 1st, 1870, proceed to examine and appraise at their cash value the lines and telegraph property belonging to each of said companies. The Postmaster-General is authorized to contract for the purchase of said property at such valuation, said purchase to take effect July 24th, 1871.

Section third provides that after the 24th of July, 1871, the Government shall have the exclusive privilege of operating the lines aforesaid, and of transmitting telegrams thereupon; and each telegram so transmitted (excepting only such necessary messages as relate to the actual working and administration of said lines) shall be paid for at a rate not exceeding twenty cents for the first thirty words thereof, including date, address and signature; but no message shall be sent for less than twenty cents. And the sums charged for the transmission of messages shall be held to cover the cost of their delivery within one mile of the telegraphic office at their destination, or within the town postal delivery at that point; but when the addressee shall reside beyond said delivery such message shall be delivered without extra charge by the first post after their receipt; or, upon payment of a proper and just sum, any such message may be delivered by special messenger, such sum for special delivery to be established by the Postmaster-General or by his subordinates, under his authority; and the Government of the United States shall always have precedence in the transmission of messages, and all other messages shall be transmitted in the order in which they are received.

Section four provides for prepayment of messages by stamps, and that a file of the originals of all messages sent from, and records of all messages received at any telegraph office shall be kept in said office, for such time as the Postmaster-General may direct, after which they shall be transmitted to Washington, to be preserved for reference; and the telegraph offices shall be kept in connection with the United States post offices, unless for special reasons, in any case, the Postmaster-General may order otherwise.

Section five provides that, as soon as practicable, a telegraph office shall be established at every post office within the United States, the gross receipts of which, for postage, are not less than \$100 per annum; provided, that the distance between such post office and the nearest adjacent line of telegraph shall not exceed twenty miles.

Section six provides for the establishment of offices or pillar letter boxes, for the delivery of stamped messages, and their transmission to the nearest telegraph office, to be despatched by telegraph.

Section seven provides for extending the postal money order system to the postal telegraph, and for the transmission of telegraph money orders at the same rates additional as are now charged for postal money orders: no one order to exceed in amount \$100.

Section eight provides that the Postmaster-General shall be authorized to cause messages to be transmitted to the newspaper press at such rates as he may determine; and he may, in his discretion, assign one or more wires to the exclusive use of the press, on such terms as will best contribute to the dissemination of general intelligence.

Section nine provides that the Postmaster-General shall be authorized to contract with any foreign or colonial telegraph company, or with any Government having control of telegraph lines without the limits of the United States, for the interchange of messages, on such terms as may to him seem proper; and he is also authorized to open negotiations for the purchase or laying down of one or more submarine cables connecting the United States with other countries, and report to Congress the terms upon which such cable or cables may be acquired or laid down.

Section ten provides that if any company shall fail or neglect to appoint appraisers, or to convey to the Postmaster-General its lines and property, the Postmaster-General shall be authorized to construct other lines in lieu of the lines of said company, and thereafter said company shall have no claim upon the Government for the purchase of said lines.

Section eleven imposes a fine of \$100 upon any company, corporation or person, who shall transmit despatches outside of the Government lines, for each offence.

And any officer, agent or employé of the Government, who shall divulge or give information concerning any telegram, except to the sender of such telegram, or the person or persons to whom it may be addressed, or his or their duly authorized agents, shall, upon summary conviction, be liable to a fine of not less than \$1,000, or imprisonment for not less than three years, or both.

Section twelve provides for the creation of a telegraph bureau in the Post Office Department, and the appointment of a Director-General of Telegraphs, at a salary of \$6,000 per year.

Section thirteen provides for the geographical apportionment of the telegraph lines of the Government into five grand divisions, each grand division to be under the control of a General Superintendent, who shall receive a salary of \$5,000 per annum; and also provides for the appointment of Assistant Superintendents, whose number and pay is to be hereafter fixed by Congress.

Section fourteen provides that as soon as the contract entered into by the Postmaster-General, under the authority of this act, shall receive the sanction of Congress, it shall be the duty of the President to appoint the Director-General and the five Superintendents herein named; and the Postmaster-General shall immediately thereupon make a classification of the telegraph offices on the lines to be acquired by virtue of this act, according to their importance, similar to that now existing for the post office system, and shall at once make all necessary arrangements to take possession of and operate said lines at the time specified in this act; and to that end he shall employ the necessary operators and assistants, whose salaries shall be fixed by the Postmaster-General, subject to future regulation by law.

Section fifteen and last, and the only sensible one in the bill, provides that persons holding offices or employments created by this act shall be removed only for sufficient and satisfactory cause; and all promotions to vacancies in such offices or employments shall be made from the grade immediately below that in which said vacancies may occur.

Curious Story of a Thief.—The Most Miserable Man.

SOME weeks ago Jacob K. Bear, telegraph operator and express agent at Brownsville, Nebraska, absconded one night with \$12,000, left in his hand as agent. He directed a letter to the paper of that place, stating that there were ninety-nine chances of his arrest to one of his safe escape with his plunder, but for that \$12,000 he would take one chance in a hundred. He wrote: "Won't this affair of mine make you a nice little local item?"

When the company learned of their loss they at once set active measures afoot to capture Bear, but failed. Lately, however, he has sent another letter to the *Brownsville Advertiser*. In it Bear states that losses in gambling led him to commit the theft. He states that one of the packages he stole contained \$8,600, and writes:

"But the best matured plans often fail; and now comes the most incredible part of my statement. The package of \$8,600 was soldered up in a zinc box, the exact size of the package, and I also had about one thousand dollars beside that. It is natural to suppose that I was very much excited when leaving, which was true, for as I was getting into a skiff my foot slipped and I dropped the box containing the \$8,600 into the Missouri river.

"In conclusion I will say this: I am where I am making money fast, and before the expiration of ten years every dollar of that money will be returned to the U. S. Express Company. If I die my life is insured in favor of the U. S. Express Company for an amount greater than what they have lost.

"I ask the sympathy of no one, but I am already fearfully punished, not knowing what moment I will be arrested for my crime—and what then? The State Prison, or suicide, if I prefer it. I will also state why I wrote the note to Holladay & Calhoun in the bragadoecio style that I did. I wanted to kill all the love and respect that my wife ever entertained for me, and thereby lessen the sorrow or anxiety that she might feel for me after she became aware of what I had done. You who have, up to this time, thought or imagined what a luxurious life I am no doubt leading, are for once disappointed, as I am one of the most miserable criminals on the face of the earth!"

Telegraphic Communication with the Planets.

M. CHARLES CROS calls the attention of the French Academy to a means of communication with the inhabitants of the planets. He thinks this may be done by sending rays of light to them from parabolic reflecting mirrors. He asserts that a set of intermittent telegraphic signals would be easily understood, and endeavors to prove that such spots of light would be plainly visible on Venus or Mars. He even goes a step further in his fanciful speculations with regard to certain bright spots which several astronomers have observed at various times on these planets. He absolutely affirms that these may be telegraphic signals sent to us by the inhabitants of Venus and Mars! The theory is very "French," but by all means let us reply at once! It can do no harm, and would only be a polite recognition of the efforts of our celestial neighbors to establish a friendly relation.—*Providence (R. I.) Journal*.

In order to effect a direct communication between the French Atlantic telegraph cable and London, a submarine cable between Salcombe and Brest has been laid

THE TELEGRAPH.

(By Atlantic Cable.)

Cable Neutrality.

LONDON, Dec. 24.—Advices from Madrid report that Mr. Sickles, the American Minister to Spain, had submitted a project to the Spanish Government for guaranteeing neutrality in the matter of ocean cables. Mr. Sickles had previously procured the British Government's approval of the scheme.

The Falmouth, Gibraltar and Malta Telegraph.

At the first general meeting of the shareholders of the Falmouth, Gibraltar and Malta Telegraph Company, in connection with the Anglo-Mediterranean and British Indian Submarine Telegraph Company, held in London recently, it was reported that the whole of the shares had been allotted, and the allotment money paid. The order for the cables had been given to the Telegraph Construction Company, and £30,000 paid on account. The laying of the Cable of the British Indian Company would be finished in March next, and the Falmouth Company's Cable would be laid in April or May, so that the whole line of submarine communication between England and India would be thus completed. Arrangements had been made with the Postmaster-General, with reference to the transmission of their messages between London and Falmouth, and the directors had also obtained the promise of special wires for their traffic, with other accommodations at the metropolitan terminus, and the same facilities as those accorded to other telegraph companies. It was intended that their tariff of charges should be as low as possible, in order that the advantages of telegraphy should be brought within the reach of the poorer classes.

The West India and Panama Telegraph Company.

The report of the West India and Panama Telegraph Company, presented to the shareholders at their first meeting, states that the number of shares allotted is 43,710, which, with the 5,000 fully paid up shares to be handed to the contractors, in part payment for the cable, represents an available capital of £487,100. The manufacture of the cable has been commenced, and 498 miles have already been completed, to the entire satisfaction of the company's engineer. The directors anticipate that the greater part of the cable may be sent out by March next. A communication has been received from the Governor-General of the Leeward Islands, expressing a desire that these islands should be included in the company's scheme, and negotiations are in progress for settling the terms.—*Mechanics' Magazine.*

The Transfer of the English Telegraphs.

It is reported that the final transfer of the telegraphs to the Government cannot be effected before the end of January. The *Times* tells us that an impression prevails in the city that the large balances that will accumulate in the Exchequer, from the new arrangements regarding the income and assessed taxes, will, "with or without some assistance from the Bank of England," prove sufficient to meet the five or six millions which have been awarded to the companies as compensation for the surrender of their property and privileges.

Floating Electric Telegraphs.

The *London Globe*, of the 3d inst., states that the International Mid-Ocean Telegraph Company has secured from the Government the loan of her Majesty's ship *Brisk*, which is to form the first floating telegraph station. This will be moored some sixty miles out at sea, off Penzance harbor. The *Brisk*, although a tolerably good vessel, is likely to have her seagoing qualities severely tested, as the spot whereon she will be quartered, named in the charts "Admiralty Patch," is exposed to terrific weather during the winter months. She is now being overhauled and fitted as a regular telegraph station. Her engines and telegraph machinery are to be supplemented with the latest improvements, the Board of Directors having ordered everything to make her complete for the service.

The advantages which the public are to derive from a system of floating telegraph stations are insignificant compared with the benefits to be derived by the owners of over 40,000 British vessels and the mercantile community. The *Brisk* is to be in electrical communication with the Penzance post-office, and a powerful steam tug will act as her tender. She lies in the fair way of every homeward bound vessel, and to Indian, Australian and China clippers she can give their sailing orders, thus saving an immense expense, which they would necessarily entail by calling for the same at any port. A ship may

report herself to the *Brisk*, and in twenty minutes afterwards her arrival would be known at the office of her owner in the city of London, and within an hour of her making the telegraph station her destination can be altered at the pleasure of her owner. For such important orders as these the Bolton Code must prove almost invaluable. By the end of next month the *Brisk* is to take up her position, and so soon afterwards as possible the telegraph cable to land will be laid.

Improvement on the Closed Circuit.

A LETTER from Mr. Henry J. Dinegro, of the National Telegraph Co. of Peru, under date of Lima, Oct. 26, states that—

"Mr. Machelalan, recent electrical engineer to the National Telegraph Company of Peru, in connection with Mr. C. Paz Soldan, has made a great improvement in the working of the closed circuit system heretofore used in the United States and Peru. It is in reality an important one, and consists in a self closing key, which suspends at the same time the wasting of the local circuits when not in action. The whole arrangement combines advantages and improvements much needed in using the closed circuits. We are at present adopting this improved system all through our Peruvian lines. The change has been conveniently made, and has given the best satisfaction."

The Preservation of Telegraph Posts.

A BELGIAN report on the preservation of telegraphic posts decides that chloride of zinc is the best and cheapest agent to employ. It is admitted that difference in the soil in which the posts are set makes considerable difference in the preservative action of the matter employed. Thus, while sulphate of copper succeeds admirably well in some situations, it is shown that calcareous soil tends to produce a decomposition of the sulphate, and a very sandy soil draws out the salt from the wood. Creosote, the report says, possesses many advantages, and in particular is very cheap, but the Belgian administration consider that these advantages are more than balanced by difficulties in manipulation, and they have given up the use of creosoted posts.

The Society of Arts and the Telegraph.

THE Council of the Society of Arts, looking at the fact that the government have now taken under their control the whole of the telegraphs of the United Kingdom, have appointed a standing committee of the society to watch the interests of telegraphy generally, as well as to promote the progress of the science and the efficiency of the system.

The following gentlemen have been invited to seave on the committee: Lord Sackville Cecil, the Earl of Caithness, F.R.S.; Sir W. Fothergill Cooke; Mr. Latimer Clark; Mr. Hyde Clark, D.C.L.; Colonel Glover; Professor Guthrie; Sir J. F. W. Herschell, Bart., F.R.S.; Prof. W. A. Miller, F.R.S.; Mr. C. W. Siemens, F.R.S.; Prof. Tyndell, F.R.S.; Sir Wm. Thomson, F.R.S.; Mr. Cromwell F. Varley and Sir Charles Wheatstone, F.R.S.—*Mechanics' Magazine.*

Government Telegraphs.

It is not necessary to expose the utter impracticability of Congressman Washburne's scheme for transferring the control of telegraph lines to the Government. The ground was all gone over last year, and it was shown that Government wires would not only not pay, but would be made subservient to the political party which might be in power; furthermore, that the secrecy now existing, as regards the contents of telegrams, would be annulled, and the celerity insured by private competition would be wanting.—*New York Commercial Advertiser.*

Humors of the Telegraph.

A GREEN country chap stopped at the window of the telegraph office in Rockport, Maine, the other day, where a young lady was receiving despatches, and after looking on a moment called to his companion, "Say, Bill, just you come and see 'em make paper collars! Don't she know her biz, hey, Bill?"

International.

TELEGRAPHIC matter was transmitted direct from St. Paul to Toronto, Canada, yesterday, for the first time on record. C. E. Hughes, of the Northwestern line here, sent the messages, which were received by Jas. Curry, of the Montreal company. The electric current worked well.—*St. Paul (Minn.) Dispatch.*

TELEGRAPH BREVITIES.

A HEAVY snow storm, which fell in Italy a few weeks since, broke down the telegraph wires in many places in the interior of Bologna, and caused other damage along the line.

M. Zautedeschi, in a communication to the Royal Academy of Sciences of Brussels, suggests that, regarding a submarine cable as a Leyden jar, when the inner insulated wires convey a message from Europe to America the message is reconveyed from America to Europe by the wires forming the outer portion of the cable, and that instruments be established at each end to receive this return message so that the operator may see that the telegram has been correctly transmitted.

The honor of Knighthood, conferred upon Mr. William Fothergill Cooke, which was recently announced, was recommended to Her Majesty as a recognition of Sir William's "special services in connection with the practical introduction of the electric telegraph."

The Burlington, Cedar Rapids and Minnesota Railway Company have contracted with the Western Union Telegraph Company for the erection of a telegraph line along their road. Work will begin as soon as the poles can be procured.

At the annual meeting of the stockholders of the United States and Mexico Telegraph Company, held in Denver, Wm. Orton was elected President; H. M. Porter, Vice-President; B. F. Woodward, Secretary; O. H. Palmer, Treasurer, and Wm. B. Hibbard, Superintendent of the Company and its lines.

A letter from Berne states that the reduction of the rate charged for telegrams in Switzerland, from one franc to fifty centimes, having led to a great increase in the receipts, the Federal Council has determined to extend the service, and twenty-two new lines are to be constructed. Already Switzerland, says the writer, divides with Belgium the credit of possessing the most comprehensive telegraphic system in Europe.

The telegraph is being extended to Japan. The Japanese Government has commenced the construction of a line from Yokohama to Jeddo, and have imported instruments and an electrician from England to superintend its construction and working. It is understood that the line is to be exclusively used by the Government, and that the public are not to be allowed to participate in its advantages.

The British Indian Extension Telegraph Company have given the order for the manufacture of their cable (to be laid between Ceylon and Singapore), accompanied by the necessary payment to the Telegraph Construction and Maintenance Company.

At a meeting of the New York Metropolitan Fire Commissioners, on Wednesday last, C. T. and J. N. Chester reported a plan, in connection with the Fire Alarm Telegraph, for establishing correct and uniform time.

Suicide of a Telegraph Operator.

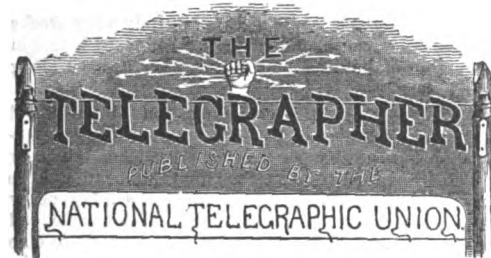
INTELLIGENCE has recently been received at San Francisco, from the northwest coast of Asia, that J. Leet, formerly a telegraph operator at Strawberry Valley, California, and who was one of the Russian Extension Telegraph Expedition, under Col. Bulkley, shot himself at Ghijgha, April 28th, 1869. He was buried by an American, the only one near that place at the time. Arnold's party, who went North last spring, visited Ghijgha, and placed a slab over Leet's grave.

Mental disorder, with which he was affected when the telegraph expedition left that part of the world (he choosing to remain in Asia, and go home via St. Petersburg), is supposed to have led to the suicidal act.

True.

THE member, Washburne, who railed foolishly on the 22d, in Congress, at the Associated Press, we hope feels better to-day, now that all his bitter and saucy things have been put in print by those whom he abused. Mr. W. thinks the Government should go into the telegraphing business, as if it had not enough to do without such intermeddling. He also thinks that \$10,000,000 will build the lines. It would take quite \$20,000,000, and then prove but a job which in the end would add \$20,000,000 more to the cost. Experience proves, with exceptions, that men who work for the Government are like the barnacles on a ship—they obstruct navigation, and demand two prices for half work.—*N. Y. Evening Express.*

Mr. MCMICHAEL has taken charge of the Supply Department of the Western Union Company at St. Louis, vice Mr. CHAPMAN, who has resigned and engaged in other business at Denver, Colorado;



SATURDAY, JANUARY 1, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 246 P. O., Washington, D. C.
 Vice-President.....W. O. LEWIS....New York.
 Treasurer.....A. L. WHIPPLE....Box 39 P. O., Albany, N. Y.
 Recording Sec.....W. W. BURHANS....Box 6010, P. O., New York.
 Corres. Sec.....F. L. POPE....Box 6010 P. O., N. Y.

LITTLE'S AUTOMATIC TELEGRAPH SYSTEM.

IN connection with the question of a material and permanent reduction of the charges for telegraphic service, we have consistently argued that such reduction was only possible through a very great increase in the capacity of the instruments used for transmitting communications. Further observation and reflection has confirmed this opinion, and in fact its correctness is susceptible of mathematical demonstration. Any attempt otherwise to establish cheap rates, notwithstanding the erroneous and one sided arguments of the WASHBURNES, GRATZ BROWN, GARDNER HUBBARD, and other advocates of low charges and postal telegraphs, must result in loss to whoever undertakes the work, whether it be a corporation or the Government, in connection with the postal service of the country.

To successfully accomplish such an increase of capacity as is essential to a material and permanent reduction of charges for telegraphic service, the invention of a reliable automatic system is indispensable.

This fact has long been recognized by intelligent electricians and scientists, and much time, thought and money has been spent in seeking the solution of the problem.

In 1850 BOKEWELL devised an automatic *fac simile* telegraph system, but this, as well as BONELLI's and other *fac simile* processes of telegraphing, have either entirely failed, or been but partially successful when attempted to be practically used.

In 1857 HUMASTON brought out an improvement on the BAIN automatic system, and as it promised valuable results, it was purchased by the American Telegraph Company, and upon the consolidation with the Western Union Company passed into the possession of the latter.

The annual report of President ORTON, of which we published a lengthy review, states that although large sums of money were spent in the attempt to utilize it, the company have now abandoned the invention as entirely worthless for practical use.

We have not space to refer in detail to the inventions of ALLAN, WHEATSTONE, SIEMENS and others, which have all failed to realize the expectations of the inventors and their friends, and like HUMASTON's, after trial, have been generally abandoned, as nearly if not entirely worthless for practical use.

Undismayed by these failures, Mr. GEORGE LITTLE, who is familiar to our readers as the inventor of the "Floating Pen," and other ingenious and scientific telegraphic improvements and inventions, has for some time been experimenting upon an automatic system, which he claims to be a complete success, and which he and his friends are endeavoring to bring into practical use.

We copy from a pamphlet recently issued, setting forth

the merits and advantages of this system, the following description:

In Nov., 1869, GEORGE LITTLE, of New York, patented a series of automatic telegraph machinery, consisting of a "perforator," a "transmitter" and a "receiving" motor. The telegrams are composed upon a plain Roman alphabet tablet, with a platinum pointed pen or stylus, and at the rate of fifteen to twenty-five words per minute. The machine is worked by two cups of battery, and is so simple that a child can prepare the telegrams for the transmitting motor with perfect accuracy. The "transmitting" and "receiving" motors are run with four cups of battery, and are self-acting, without clock work, weights or springs, and are so voracious that each machine, with an indestructible stylus and one conducting wire, transmits, in circuits of two thousand miles, in all weather, as much matter as can be composed by twenty young ladies, each composing fifteen or more words per minute, upon twenty of the composing tablets, which are about six inches square, and made of hard rubber or other non-conducting substance. The telegraphic characters are recorded upon chemically prepared paper at the receiving station, at the rate of two to four hundred words per minute, with unerring accuracy and precision. Drop copies at intermediate stations are made without the least trouble, and without any retardation of the working of the line wire. Mr. LITTLE discards entirely the use of *electro-magnetism*, which is the rock upon which all other inventors in automatic telegraphy have been wrecked. This is one of the most beautiful features of Mr. LITTLE's wonderful invention, and it is one of paramount importance, inasmuch as exact synchronous motion of the "transmitting" and "receiving" machines is in no respect of the least consequence to insure absolute correctness in the recorded telegrams. The telegrams are composed upon strips of paper, which are perforated with one punch and one die, by means of a metal point or stylus in the hand of a child, with unerring accuracy, and with vastly greater speed than has ever before been accomplished by eight punches, worked by forty-two keys.

It will be realized that if Mr. LITTLE's inventions will actually accomplish one half of what is claimed for them, they must work a complete revolution in the telegraph business, not only of this country, but of the world. Experienced electricians and telegraphers, who were not interested pecuniarily in them, assert that they have in experimental trials accomplished all that is claimed for them.

Mr. GEO. B. HICKS, of Cleveland, Ohio, the inventor of the well known and extensively used HICKS repeater, and whose reputation as an electrician and telegrapher stands high—a man not likely to be led away by enthusiastic appreciation of any new invention—after a critical examination and observation of "LITTLE'S Automatic System of Telegraphing," writes:

Our experiments of the past ten days demonstrate that all the difficulties in the way of very rapid and accurate transmission of matter by the telegraph have been, to a very surprising degree, overcome.

I shall first detail some of the experiments made, and then explain the machinery by which the results were reached.

At the test, yesterday, the transmitting machine was started at a speed of about six hundred and fifty (650) letters per minute, and two wires were connected at Boston, so as to give a line of over five hundred miles in length from here to the "Hub" and back, and the registering on the receiving instrument was excellent. Two more Boston wires were then added, making over one thousand miles of wire altogether, and the impressions were as good as before.

The battery, which was the regular one used to work a MORSE wire of 250 miles in length, was now reduced from fifty to twenty-eight cups, with no change in speed of transmission or clearness of the record, though there was a heavy thunder and rain storm prevailing between New York and Boston. Rheostat resistance machine was then added—equal to eight hundred miles of No. 8 galvanized wire—still the record was perfect.

Finally, the Philadelphia wires were connected (still with the reduced battery power), making the total circuit operated over two thousand miles, and the record was still distinct, but somewhat fainter than before. A slight addition to the battery would have made the letters as distinct as in the previous cases, but the result, as it was, was so good that no further change in battery power was at all necessary.

This experiment showed, conclusively, that it is possible to telegraph over a single wire at immensely increased speed, as compared with the MORSE system, and with an accuracy as much greater than that attained by any other existing method as the operation of machinery is more correct than the manipulation of an operator.

In considering the application of this system to actual business several points presented themselves:

It is entirely practicable to transmit upon several wires at the same time, with the same speed as upon one; but I was apprehensive that when it came to "dropping copies" on the same wire, as is necessary with press reports, a considerable diminution of speed might be necessary.

Special experiments were subsequently made, however, to determine this, and we found that, even if ordinary magnets were used, a speed of five hundred letters per minute could be maintained while telegraphing to several offices simultaneously on a single wire. The armature of the magnet was made to vibrate so rapidly, indeed, that the signals could not have been read by the most expert operator, and yet were clearly recorded on the prepared paper.

Upon further consideration of this point, however, I am satisfied that "drops" can be had without reducing, and without using magnets.

To my mind these experiments were very satisfactory, and as conclusive as if repeated any number of times, for the only change in conditions that can be where atmospheric influences are more unfavorable, and then an increase in battery power would be the only thing necessary; or "repeaters" can be used, of an exceedingly simple construction, and in this way any desired length of circuit can be worked.

While we are not prepared to endorse all that is claimed for these inventions, it must be conceded that

Mr. LITTLE makes out a strong case. Such an increase of capacity is now the great desideratum of the telegraph business, and we await further developments with much interest.

We regret that Mr. LITTLE and his friends have connected his inventions with a telegraphic enterprise whose previous history has not been such as to inspire confidence or secure support. The past reputation of that concern is a heavy burden to carry, but we trust that in any event the inventions may have a fair trial, and if the present anticipations are realized, fame and fortune are both insured to the inventor.

The Bishop Gutta Percha Works.

We publish this week a somewhat lengthy but very interesting account of the BISHOP Gutta Percha Works in this city. From a comparatively small beginning, and under many adverse circumstances, Mr. BISHOP's establishment has grown to extensive proportions, and the value of the cables, insulated wires, and gutta percha articles manufactured by him annually, is very great. We believe this is the only establishment of the kind in this country, and its success is highly gratifying as well as complimentary to its proprietor and manager. Mr. BISHOP has ample facilities for the manufacture of the largest ocean cables, and we hope he may yet be able to turn out a specimen of ocean cable which shall demonstrate the ability of an American establishment to compete successfully with the great telegraph cable manufacturers in this business.

Mr. BISHOP has always been a liberal advertising patron of THE TELEGRAPHER, realizing, as all intelligent manufacturers and dealers in telegraph instruments, materials, &c., do, its great value as a medium for bringing their articles to the notice of those having occasion to purchase them. We congratulate Mr. BISHOP upon his success in the business which he has so ably and intelligently created and conducted, and confidently predict for him even greater success in the future, under the present rapid increase and development of the telegraph business.

Deserved Promotion.

Mr. W. A. L'HOMMEDIU, who has for some years past worthily filled the position of chief operator of the Western Union New Orleans office, has, we understand, been promoted to the superintendency of the Tenth District of the Southern Division of that company.

We congratulate both Mr. L'HOMMEDIU and the company, and have no doubt but that the change will prove satisfactory and advantageous to all concerned.

Gray & Barton.

We take pleasure in calling the attention of our readers to the advertisement of GRAY & BARTON, of Chicago, Ill., and Cleveland, Ohio, in this paper. This firm have recently increased their facilities, and are now prepared to respond promptly, and upon liberal terms, to any demands upon them in the line of their business.

Recognition of Merit.

Mr. J. G. CASE, whose popularity as receiving clerk, at the main office of the Franklin Telegraph Company, No. 11 Broad Street, is well established, has been presented with an elegant seal ring by Messrs. DILLER & SHUMWAY, of No. 14 Broad Street. More of such recognitions of merit and courtesy would be acceptable to those who are by their positions brought into constant intercourse with patrons of telegraph lines.

New Use for Electricity.

LIGHTNING struck a wine cellar in France last fall and converted a large quantity of bad wine into excellent brandy. This providential application of the Voltaic pile with such profitable and remarkable effect, has led to the artificial use of magnetic currents in the manufacture of

brandy. Electricity applied to a cask of bad Moselle entirely changed its character, and experiments with other wines, at least so Dr. Scoutetten assures us, had a similar result. The doctor explains, for the benefit of persons anxious to try the operation, that the wires of the Voltaic pile should be tipped with platinum, to which must be attached electrodes of the same metal. Dip both into the liquid and you will precipitate it, and produce premature age.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

The New Western Union Office at Boston.

BOSTON, Dec. 20th.

TO THE EDITOR OF THE TELEGRAPHER.

WITHIN the past few months the building at No. 83 State street, in this city, occupied by the Western Union Telegraph Company, has undergone extensive alterations, a description of which, now that they are nearly completed, may be of interest to the readers of THE TELEGRAPHER.

The fourth floor has been thrown into one large and spacious room, about seventy-five feet in length and twenty-five in width, into which the operating department of this office was moved on the night of December 3. The floor of the room is newly laid with hard pine, well oiled. The walls are painted a light blue color, with a narrow black walnut upper border. Three good sized windows at each end of the room let in an abundance of light and pure air, of both of which we had but a limited supply in the old operating room. A small side room at the southern end serves as a coat room for the operators; in another small room adjoining are kept the supplies for the department. The sanitary and wash room are also on this floor, but the accommodations in this respect, as compared with others, are rather limited. Under the circumstances perhaps they could not well be otherwise, but they are neither very convenient nor particularly ornamental.

The instrument tables are of a new pattern, similar to those now in use in the Washington, D. C., office. They are twelve in number, six by four feet in size, and constructed of black walnut and chestnut. On each table are four instruments, but the table being divided by plates of hammered glass, a quarter inch thick and a foot high, the sound of the instruments does not interfere with each other. Through the centre of each table rises an improved gas-burner, with porcelain chimney and shade, giving a steady, subdued light, much less trying to the eyes than those heretofore in use. At the southern end of the room are two "combination" printing instruments, both of which are used in New York circuits.

An entirely new set of relay instruments have been put into the new office. The sounders are also mostly new, but the old keys are generally retained. The relays are of the new low resistance pattern, averaging about sixty-three ohms each—an aggregate resistance of about 2,970 ohms—or reckoning fourteen ohms per mile, a fraction over four miles each, and a total of a little over 212 miles. This is a great improvement on the old relays, several of which were of nearly 500 ohms resistance, and none of less than 200 ohms.

In the centre of the room, on an elevated platform, is a handsome desk for the use of the manager; another desk facing the manager's is for the use of the chief operator. Behind the chief is the switch. The old switch, the invention of Mr. Milliken, the manager, is used in the new room for the present, but not being large enough to accommodate the present and increasing wants of the office, it will shortly be replaced by a new and much larger one. Two sets of instruments are attached to the switch, for the use of the chief operator. The office wire is composed of seven strands of fine copper wire; that running under the floor is insulated with two coatings of gutta percha, and that which connects the main lines in the tower with the switch, also the battery wires, are insulated with tarred hemp.

The operating room is connected with the receiving department by means of a brass pneumatic tube, through which leather buckets containing the messages are shot up from the first to the fourth floor, and two large zinc tubes, down which messages for delivery are sent. Another of these tubes connects the room with the ladies' department, and a fourth with the Associated Press office below.

Above the operating room, and connected with it by a flight of stairs, is the battery room. This also has been completely transformed. A new pine floor has been laid, and the battery stands are alongside the walls instead of being in the centre of the rooms, as formerly.

The old carbon cells have been superseded by large Grove cells, and the number greatly decreased. About 900 cells, including extra batteries, were used before; now about 250 are found sufficient for practical purposes.

Eighteen wires are fed from a single battery of sixty cells. Under the new arrangement each instrument has a separate local battery of one cell. Formerly one large battery served as local for all instruments.

From this room or attic the tower rises to a height of about twenty-five feet above the roof, and from this tower the air-lines stretch away in all directions.

On the third floor, below the operating room, are the offices of Mr. C. F. Wood, superintendent of the fifth district, the book-keeper of the Boston office, the Associated Press, and the ladies' department. The ladies' department is fitted up in a style similar to that of the gentlemen's room, with the exception of the floor, which is nicely carpeted. Ten wires are worked in this room.

In the corner of the passage way is a Magee hot air furnace, furnishing the heat for the operators' room above. The second floor is not needed by the company at present, and being well adapted to banking purposes, will be sub-let to other parties.

The first floor and basement of the building are under process of alteration, and will be finished in due style. A description of them will be given in THE TELEGRAPHER when they are completed.

These improvements have been carried out with admirable success under the personal supervision of Mr. M. V. B. Buel, the electrician of the company. No expense has been spared to make everything as perfect as possible, and Boston may well boast of having the finest telegraph office on the Atlantic seaboard.

Below is a list of the persons employed in the main office:

Manager, G. F. Milliken; Chief Operator, T. A. Davin; Assistant Chief Operator, C. W. Henderson; Night Manager, J. E. Wright.

Operators.—H. S. Martin, C. B. Noyes, J. C. Barrett, J. S. Whitacre, J. W. Duxbury, H. W. Wheeler, Frank Stevens, C. J. Brown, J. A. Sherman, C. R. Sherman, P. H. Burns, T. Babb, A. H. Babb, P. J. Allen, C. H. Hatch, E. A. Beardslee, E. J. Fullam, J. A. McGee, C. G. L. Pape, E. F. Leighton Blake, E. L. Bugbee, E. J. Davin, P. J. MacMahon, W. W. Wood, J. A. Elms, G. N. E. Kimball.

Ladies' Department.—Chief Operator, D. E. Rand; Miss H. Partridge, Miss Clara Crocker, Miss Martha Fisher, Mrs. E. A. Beardslee. Carrier, Miss Lizzie Durant.

BOSTONIAN.

The Western Union Railroad Telegraph.

FULTON, ILL., Dec. 13th.

TO THE EDITOR OF THE TELEGRAPHER.

I AM prompted to write a brief note, from the fact that there are a few things worthy of notice in this part of the telegraphic vineyard. One line (that of the Western Union Railroad Company) extends from Racine, Wis., to Rock Island, Ill., and is under the supervision of E. O. Wait, whose headquarters are at Racine. Nearly all the operators are also agents for the railroad company, except at the larger stations. There are thirty-two operators employed on this circuit, and I think there is not a more harmonious band in that employment than are we. I cannot flatter, and don't when I say that in a great measure it is due, this good brotherly (and sisterly—two of the latter work with us) feeling, to the discountenancing of all rowdiness and boyishness among the operators by our superintendent; and there is a general willingness to respect it, because it's natural. The time has come when a person, to get employment of a worthy kind, must be worthy of it—and there is no employment where it is more necessary than among the fraternity. And this leads me to speak of the lady operators. In my opinion there is nothing which tends to keep a line in trim, and the operators within bounds, so much as to be constantly reminded that there is a "lady at the key" ever on the alert for news. We are constantly in each other's company, though miles apart. Miss Kate E. Dinehart, at Burlington, and Miss M. M. Hammett, at Springfield, are the lady operators employed on this circuit. The former has already mastered the art, and is a good sound operator. It is the general wish of all that, in case either talks of resigning, our superintendent will increase their salaries sufficiently to hold them. There are few changes taking place on the line, which indicates that employer and employé are alike satisfied.

Joe Kavelin, of Clinton (Wisconsin) office, has a respite of six months on account of ill health.

Anson Carr died at Fulton, Ill., a few days since. He was an excellent young man, and a fine operator. His disease was typhoid fever. He bore his suffering without a murmur, and has gone where, if we reason with "Gates Ajar," "Diamond laid is his sounder and key." We

trust it so. In fact our faith is as broad as the far West, and "His love is boundless."

I hear there is a conspiracy being formed against our superintendent, E. O. W. I do not know who is the author of the villainous plot, but all hands are in favor of it. But he shall have "due and timely notice," and if we don't "watch" him he may raise "cane" with us. You will know the result of the affair.

THE TELEGRAPHER is well liked out here, and we are glad to see it surely prospering. The "ventilations" of the Chicago, Philadelphia, Washington, and other "big" offices have been quite interesting to us. Is not one side of the sheaf black and the other white? As for our little "home"—one hundred and sixty miles long—we are all on a level. Superintendent and employé look straight from eye to eye—no looking up nor down.

ONE OF THE THIRTY-TWO.

The New General Superintendent U. P. R. R. Telegraph.

UNION PACIFIC RAILROAD, Dec. 22nd.

TO THE EDITOR OF THE TELEGRAPHER.

THE recent appointment of Mr. J. J. Dickey, formerly of the Western Union Company at Chicago, as General Superintendent of Telegraph for the Union Pacific Railroad, is a movement in the right direction, which has long been needed. Mr. Dickey is believed to be fully competent for the position, and will discharge its duties in a manner highly satisfactory to and for the best interests not only of the line but of the numerous employes. During the short time he has been in charge of the line, his administration of its affairs has been such as to afford satisfaction to all concerned.

In addition to many years' experience in the business, Mr. Dickey is noted for his urbanity of manner and sterling social and business qualities. He appears to take a personal interest in those employed under him, of whom there are about one hundred and fifty, and he is very popular with them already.

It is the desire of us all that Mr. Dickey may remain in charge of the line as long as we shall be employed on it. And all join in wishing him a Merry Christmas and a Happy New Year.

KEY OF THE U. P.

Dull Times—Unexpected Promotion.

T. P. AND W. RAILWAY, Dec. 11th.

TO THE EDITOR OF THE TELEGRAPHER.

PRESUMING that you would like to hear from this part of this State, I take the opportunity of keeping you posted. Telegraph matters have been dull for the past few weeks, but are now improving, and a few operators have been relieved in consequence. In busy times a good, steady operator can generally command a situation here, but "drunkists" stand a very poor show to remain in or even get a situation, as our worthy superintendent, Mr. D. K. Smith, will not tolerate anything like drinking, on or off duty.

Here's a bull too good to be lost, that has never been in print: A young man (operator), not a thousand miles from Detroit office, received the following:

"Bu to H. Clay Wood Inspector, Adj. Gen'l's ofs."

On getting it repeated by "Yankee," it turned out to be for H. Clay Wood, Inspector, &c.

Everybody enjoyed the joke of Mr. Wood's promotion.

THE TELEGRAPHER is well patronized in this part, and always eagerly read.

R. E. PEATER.

The Policy of Telegraph Employes.

LOUISVILLE, Ky.

TO THE EDITOR OF THE TELEGRAPHER.

PLEASE give place in your columns to my little suggestions. Wherever I am known I feel proud to know that I am considered the operators' friend, and am an old operator myself, or rather I was fifteen or twenty years ago.

"If these companies want to fight, let them pay the expenses themselves," says a correspondent. How can the telegraphers of this country avoid paying their "war tax?" is the question. We must do nothing rash, but we must protect ourselves in the manner that will do the least injustice to others.

If the Western Union Company can by any possible means break down the rival companies, how can we maintain salaries up to a living rate? If we refuse to pay our "tax," and make a general strike, would not this aid the enemy? Would not this be a "galling fire in the rear?" It would be striking down our only hope.

American operators are vitally interested in maintaining competing lines; the true interest of the telegraphic fraternity is to maintain competition at all hazards. I

insist, that we must not allow the wily generals of the "old monopoly" to persuade us to a policy of offering ourselves up in detail.

It is within the power of operators and other employes, to league together under district heads and maintain competition.

I suggest that an organization be effected. Let meetings be held by all the operators and other employes in the principal cities, and appoint delegates to a State convention, who shall elect a chairman and executive committee; and let this committee have power to declare—whenever the Western Union Company, or any of its competitors, reduce rates below a paying point, for the purpose of breaking down rivalry—that such State or territory is being made a "burnt district" for the purpose of breaking down competition; and order that all operators and other employes shall cease work until the tariffs are fixed by all the competing companies, at prices that will pay. Then let the operators and other employes in said territory obediently stop work, in perfect unity with the purpose plainly stated to the public, whose sympathy will be with them.

Organize and strike! Strike now, strike for a living tariff. Maintain competition, and the demand will maintain salaries.

If we strike for salaries we kill competition, and then, with several thousand operators and other employes set free to take our places, we are at the mercy of "monopoly," and a further talk of strike would be absurd.

I repeat, *organize now, and strike now.* Wherever you find a "burnt district" strike. A MANAGER.

Low Salaries and Unfit Accommodations.

CINCINNATI, Dec. 13th.

ALMOST every issue of our organ brings complaint from some quarter of ill treatment. I have watched for something from this point, but although there is just cause for complaint in the matter of salaries, no one has seen fit heretofore to make our situation known. We have married men in our office working first class circuits at seventy-five dollars per month, and some working circuits at fifty dollars. Shortly after the success of the Franklin operators, some five men here were astonished by the assurance from the chief operator that their salaries would be increased five dollars per month, but, although there has been several "pay days" since that time, the promised raise has not appeared. We cannot blame our officers here for this. The trouble lies at headquarters, where they seem determined to keep us down at all hazards to starvation wages. Of our officers here we cannot and do not desire to complain, as they are all gentlemen, and treat us as such. Besides the salary matter, we think our office itself might and should be improved upon, as the present one is dark and very unhealthy; besides which the floors are not kept in a clean condition, and the walls are full of dust, the accumulation of six months. We have soap furnished (hear that, ye men of Washington!), and a towel once in two weeks, which is, of course, clean, their being but thirty of us to wipe upon it daily. As at every large office, we have bulls occasionally, and matters pass through that are apt to make us merry. Not very long since the operator at Metamora, Ind., had occasion to send a collect message to Hamilton, O. He not being able to find the person addressed, sent an office message, asking, "What shall we do with message?" Imagine his surprise on receipt of the following answer: "To Hamilton, O. Send it back. Sig. Metamoras, Ind." "SHOO FLY."

Oregon Telegraphic Items.

SALEM, OREGON, Nov. 30th.

TO THE EDITOR OF THE TELEGRAPHER

As it has been some time since I have had the pleasure of reading anything in your paper from this part of the telegraphic vineyard, I will give you a few items from Oregon. The Western Union Company own the only circuit from Sacramento to Portland. The same company own the circuit from Portland to Victoria (B. C.), through all the principal towns in Washington Territory. The circuit from Portland to Sacramento is divided into two districts, of which O. P. S. Plummer is superintendent as far as Marysville, Cal. On the same circuit, at Portland office, James Guild is manager, with "Billy" Leahy as assistant. At the next office, Oregon City, A. Levy finds no trouble in attending to all of the duties, such as messenger, manager, assistant, etc. Wacunda Mr. Williams presides over; at Salem, B. T. Brown "manipulates" the key; and at Albany, Willie Thierman, a lad of 15, "runs" the machine. At Corvallis Frank Johnson is operator; Eugene City, A. V. Peters and Stewart Eakin. At Oakland Mr. Lord; Dr. Hamilton at Roseburg; E. A. Estis at Estis. Canyonville in winter months is used as a repeating office, over which E. A. Brown presides.

Grave Creek, with Homer Harkness, comes in next Jacksonville, with Wm. Turner, and Ashland, with Mr. Applegate, finishes up the list of offices on the circuit in Oregon.

The Oregon Steam Navigation Company have a line in complete running order to Umatilla from Portland, a distance of 110 miles, with way offices at Cascades and the Dalles. Daniel Leahy is the Portland operator of this line.

The cable of this company across the Willamette River at Portland was broken last week by a vessel's anchor, which will put the company to considerable expense and trouble.

The Oregon Central Railroad Company, which is now laying track at the rate of three fourths of a mile a day, will soon begin to build a telegraph line along the route of the proposed railroad. The Western Union Company have lately reduced to nearly, and in some cases to fully, one half the former tariff on all their lines on this coast.

The only changes lately are: E. A. Brown from Yreka, Cal., to Canyonville, Oregon; Mr. Donahue resumed his former place in the Yreka office. Dr. Plummer, District Superintendent of the "Monopoly," has lately moved headquarters from Albany to Jacksonville, Oregon.

"The Telegrapher" Appreciated.

QUINCY, ILL., Dec. 7th.

TO THE EDITOR OF THE TELEGRAPHER.

I SUPPOSE you will not object to hear a word from this silent city—silent to the columns of THE TELEGRAPHER; and 'tis a pity that the telegraphic fraternity should not give you a word of encouragement from this our pretty city. Business here, since the reduction of the rates of telegraphing, has increased very rapidly; and, giving both the W. U. and P. and A. a good business, the increase of the W. U. office is about one fifth on the total receipts, the P. and A. doing the same. There has been a slight change this week in the W. U. office here, caused by Mr. E. A. Street, report manager, having resigned, accepting a position on the night force at St. Louis office. Do not know as yet who has been appointed to fill the vacancy.

It is very gratifying to see the manifest interest taken by the fraternity in subscribing for THE TELEGRAPHER. We now see that our paper is rapidly and constantly growing in the telegraphic favor, and meeting the approval of all. Most of the operators here are subscribers, and those who are not are always on hand when the paper makes its weekly appearance, to obtain an early perusal of it. When asked to subscribe, they cannot afford it, they say. Poor fellows! let's take compassion on them, and make up a purse, so as to present them the paper gratis. Two dollars would make too deep an incision into their pockets, although, as before stated, they are generally the first to read its columns.

I notice a letter from our friend McD., of Minneapolis, Minn., for which his friends give many thanks. Let us hear from you often, Mac, and your Northern home.

The weather for the past few days has been very disagreeable—snow or sleet almost every day—but looking at present very favorable for pleasant weather.

E. D. M.

Planchette's Extra Compensation.

WASHINGTON, D. C., Dec. 8th.

TO THE EDITOR OF THE TELEGRAPHER.

PLANCHETTE, in a communication to THE TELEGRAPHER, stated he had received as much as twenty dollars in one month for extra services. He will probably receive extra pay again this season. But he did not state that he was filling a first class position for the sum of twenty dollars per month, when he should have received a full salary for the duty he performed. This the Western Union Telegraph Company call extra pay for extra work. If operators hold two positions, and work night and day to fill them, they should receive the compensation the company would have to pay were they compelled to fill these offices without having men work day and night. We think some of the operators are a little to blame for this state of affairs. They complain of poor pay, and extra work without extra pay, yet they encourage all this by filling offices for about half pay, because they can do so by working day and night. We hope the fraternity will consider this matter and look to their interest. We shall endeavor to ventilate wrongs perpetrated by operators towards companies as well as the wrongs of companies towards operators. We desire to see justice done on both sides. If the golden rule was practiced a little more by both officials and operators we are satisfied we would not be forced to perform this unpleasant duty. That obnoxious order still stares us in the face whenever we enter the office for duty. We do hope it will be abolished. It is annoying to the

MAGNETS.

Monumental City Telegraph Matters.

BALTIMORE, Dec. 21st.

TO THE EDITOR OF THE TELEGRAPHER.

THE following items from this place may be of interest to your readers:

The Franklin Telegraph Company to-day occupied their new office, 21 South street. The office is in the basement of a fine marble building just erected, and though smaller than some of the other offices, is the finest in the city. The operators have a most comfortable operating room, and are much pleased with the change. The situation being in the business centre, and convenient to the principal brokers, there is every prospect of the line doing an increased business.

The P. and A. Co. occupy the same office with the Franklin. This line is growing in favor, and their increasing facilities for Western business is justly appreciated by the business community. A branch office has been lately opened by the P. and A. at Canton, to accommodate the oyster packing business in that vicinity, and already this line commands a good share of this business.

The Fire Alarm Telegraph has recently been extended to cover the growth of the city, and four new boxes have been erected.

Mr. John H. Gordon, one of the operators of the Fire Alarm office, was married on December 14th to Miss Amanda J. Clark, of this city. That he may ever be prosperous and happy in his new sphere, and have no false alarms in his family, is the sincere wish of his many friends. MONUMENTAL.

PERSONALS.

Mr. W. P. WESTERVELT was in Washington, D. C., this week, and was cordially welcomed by his many old telegraphic friends.

Mr. J. W. BOOTH, formerly of the G. T. R. R., Toronto, Ontario, has been appointed agent and operator at Bonneville, Utah, on C. P. R. R. of California.

Mr. EDWIN EVERTS, formerly of Oswego, N. Y., has accepted a position in the Laurence, Kansas, Western Union office.

Mr. CHAS. T. BENDER is the manager of the Central Pacific R. R. office, Reno, Nevada.

Mr. A. S. STRONG is now engaged in Virginia City, Nevada, office.

Mr. W. S. BENDER has retired from the business, and is now the agent for the Central Pacific R. R. Co., Reno, Nevada.

Mr. CHARLES J. THOMAS, formerly of the Western Union Sacramento, California, office, has taken charge of the Reno, Nevada, office, of the same Company.

Mr. JOHN MORRISON, formerly of Cheyenne, more recently of Reno, Nevada, has been transferred to the Western Union Sacramento, California, office.

Mr. JOHN CURRAN, late of the C. P. R. R. Winnemucca office, has accepted position in the Western Union San Francisco office.

Mr. W. B. FRENCH has taken a position in the Western Union St. Louis office.

Mr. CARTER, recently of Boston, Mass., has been appointed chief operator of the Western Union office, St. Louis.

Mr. J. BEEMER has accepted a situation in the Western Union St. Louis office.

New Patents.

For the week ending Dec. 28, and bearing that date.

No. 98,206.—ELECTRICAL ANNUNCIATOR FOR HOTELS. HENRY B. Porter, Chicago, Ill.

I claim, 1. The pivoted and gravitating hooked armature, C, applied to the helix, B, in combination with a sliding cover, I, substantially as and for the purpose described.

2. The arrangement of lifting arms, K, on vertically sliding bars, J, in combination with the gravitating slider, I, working over numbered or lettered plates, H, said sliding bars, J, being connected to a key shaft, L, substantially as and for the purpose described.

3. Covering slides, I, constructed with toes, I, upon them, and arranged so as to move over stationary numbered or lettered plates, H, as described.

No. 98,352.—SIGNAL-BOX MECHANISM FOR FIRE-ALARM TELEGRAPH. Moses G. Crane, Newton, Mass., assignor to James M. Gardner, St. Louis, Mo.

I claim, in combination with a signal-box mechanism of a fire-alarm telegraph, an insulated circuit, which (for breaking and closing the circuit) automatically and continuously rotated by the stress of a spring or weight, exerted through a suitable train of gearing, substantially as described.

BORN.

YOUNG.—To Wm. H. YOUNG, Manager of the Bankers and Brokers' Washington, D. C., office, on Christmas morning, a daughter.

MARRIED.

ANDERSON.—PINNEY.—At Buffalo, N. Y., Dec. 23d 1869, by the Rev. J. HAZARD HARTZELL, J. ANDERSON, Jr., formerly of Newark, Ohio, to Miss GERTRUDE PINNEY, of Buffalo, N. Y.

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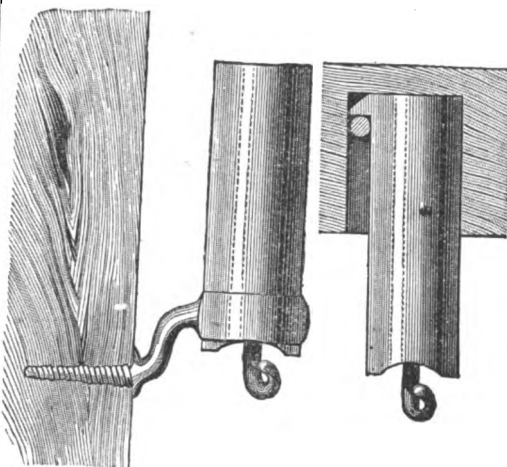
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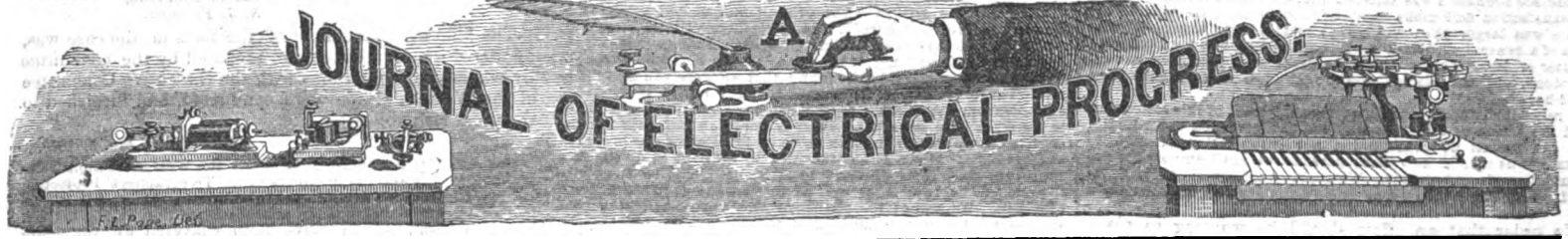
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THE TELEGRAPHER.



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New York, Saturday, January 8, 1870.

Whole No. 182.

A GENERAL STRIKE ON THE WESTERN UNION LINES.

We regret to have to record this week the occurrence of a general strike on the lines of the Western Union Telegraph Company, but will endeavor to give a full and correct history of the affair, and its progress up to the time this paper goes to press.

The first that was known of the difficulty here was the information that the operators in the Cincinnati office had quit work in a body, in response to an appeal from the San Francisco operators to sustain them in asserting and maintaining their rights, and the previous status, as regards salary, of the profession.

Owing to the partially interrupted communication with California, at first in consequence of the storm on Sunday, and subsequently on account of the strike, and on account of the refusal of Mr. Mumford, the General Superintendent of the Western Union lines west of the Rocky Mountains, to allow the operators to communicate in cipher, it has been difficult to get at the real facts of the case.

Up to the time when this article was written the case seems to be as follows:

During the past two years a Telegraphers' Protective League has been quietly organized, and now extends throughout the country. It is, of course, a secret organization, and its members are leagued together for the maintenance of the rights and interests of the telegraphic fraternity, so that their influence may be combined and made effective, instead of being frittered away, as heretofore, through the want of a suitable organization. The organization and extension of the League has been conducted as quietly and secretly as possible, in order that it might become strong and powerful before its existence should be more than suspected by the officials of the Western Union and other telegraphic companies, who would of course seek to demoralize and destroy it by persecution of its leading members, and refusing to give employment to those connected with it who might have occasion to seek situations.

The League has now become strong, and of late but little attempt at secrecy has been made. The recent successful strike on the Franklin line developed its existence, and it was felt that the necessity for any further attempts to conceal it had ceased.

In due course of events circuits were established among the operators on the Pacific Slope. This fact came to the knowledge of the higher officials of the Western Union Monopoly in that section, and they determined upon crushing it out. As has been repeatedly predicted in THE TELEGRAPHER, the progress of the attempt to kill off the competing lines, by the reduction of tolls on the Western Union routes covered by them, to a point at which payment of expenses was impossible, having reduced receipts, the employes would sooner or later be taxed, by a reduction of compensation, to make up, in whole or in part, the deficiency. California, being a long distance off, and telegraphic communication therewith being monopolized by the Western Union Company, was thought to be a good point at which to test the feasibility of such action. Whether acting on direct instructions from headquarters (which, as will be seen subsequently, the officials here deny,) or upon his own superior judgment, is not yet certainly known. Mr. George H. Mumford, the before mentioned Superintendent, whom the telegraphers connected with the Russian Extension Expedition doubtless remember with no particularly friendly recollection, took upon himself the task of crushing out the League, and effecting such a reduction of salaries as should increase the profits of the California Western Union Monopoly. In San Francisco the salaries of three operators were reduced, and three others discharged for being members of the League; and three operators in Sacramento also had notice of reduction;

and a number of operators were also discharged for refusing to stand by the San Francisco and Sacramento operators. The result was a general strike of the Western Union operators on the Pacific Slope, and an appeal to their brethren in the East to stand by them, and redeem their pledge as members of the League. Thus matters stood on Monday morning last, when the employes of the Western Union Company at Cincinnati, Chicago, Cleveland, and other principal points at the West, demanded that the action of Mumford be repudiated, the proposed reduction of salaries abandoned, and the discharged operators restored to their positions. This was refused, and the operators quit work, and the strike, which is destined to become telegraphically historical, commenced East of the mountains.

A meeting of the Cincinnati operators was held Monday morning (all but one of them having engaged in the strike), at which they endorsed the action of the operators on the Pacific Slope, in opposing a reduction of salaries there, and expressed a determination to support their brethren with all their strength. A copy of the minutes was sent to Mr. Williams, District Superintendent, who replied that he had no control over the matters in San Francisco, and that no reduction had been made in his district, or was contemplated. Gen. Stager also telegraphed that no change was contemplated there.

At another meeting, held in the afternoon, Superintendent Williams was present. The meeting informed the latter that they had no local grievances; their action was, to protect their Western brethren, and save themselves from similar treatment. The following resolution was unanimously adopted:

Resolved, That any proposition to resume our work, which does not guarantee the reinstatement, on the old terms, of all engaged in the present movement, be rejected.

Encouraging telegrams were read from Louisville, Indianapolis, Columbus and Pittsburgh.

The officers of the company, with such temporary assistance as could be obtained, managed to get off the press reports, and a portion of the more pressing private messages left for transmission by customers not informed of the strike. The operators at Chicago, and other western points, also struck on Monday. At Chicago, nearly all the men on duty left the office in a body, and were followed by the lady operators, who cheerfully cast in their lot with their brethren, and expressed their determination to stand by them to the last in resisting aggression and maintaining their rights.

On Monday evening a meeting of the League in this city was held, at which, after a discussion of the situation, the following resolutions were unanimously adopted:

Resolved, That a Committee of three be appointed to wait upon the Executive Committee of the Western Union Telegraph Company, informing them that they are members of a protective association of telegraphers, extending as far west as San Francisco, and that members of our association there inform us that the company have reduced their salaries at that point, and that they ask members everywhere to aid them in preventing this reduction.

Resolved, That this Committee be instructed to request that the salaries of members at that point be not reduced, and that those operators who have been discharged for refusing to submit to this reduction be reinstated. That in case the Western Union Executive Committee return an unfavorable answer to our Committee, the Grand Chief Operator of the Telegraphers' Association will order all members to aid our brethren in San Francisco in the only way possible—that is, by immediately suspending work.

Resolved, That this Committee be instructed to report to the Grand Chief Operator the result of such interview by or before 3 P. M., January 4, 1870.

The meeting was very full, and all present were determined that, if driven to the final resort, the matter should be contested to the bitter end, whatever the consequences might be.

During the evening advices were received from Baltimore, Washington, Pittsburg, Cleveland, Chicago, Cincinnati, Louisville, New Orleans, Albany, and many other

places, all expressing a determination to stand by their California brethren, and anxiety to know what course the League had decided upon. It was, however, the general sentiment of all present that no precipitate action should be had, and that an earnest and sincere effort should be made with the officials of the company here to arrange matters, without the necessity of further complication or difficulty.

Mr. Burhans, the Grand Secretary of the League, had previously had an interview with Mr. O. H. Palmer, one of the Executive Committee. Mr. Palmer, on the authority of Mr. Mumford, denied that any reduction of salaries had been made or attempted in San Francisco, or elsewhere, or that any operators had been discharged, except for the purpose of reducing the force at San Francisco, which it was claimed had been unnecessarily large. The officers of the League in California had, however, made statements directly to the contrary, and it was evident that a severe economy of truth existed on one side or the other. Finally, Mr. Palmer franked a despatch from Mr. Burhans to Mr. Jacobs, the Grand Chief Operator at San Francisco, asking for a statement of the case, exactly as it was. After some delay a reply was received, to the effect that Mr. Mumford declined to allow Mr. Jacobs to transmit in cipher the statement desired. He was then requested to send it in an open message. [It should be remarked here that it would probably have been useless to have filed and paid for a cipher message, as in the demoralized condition of the lines consequent upon the strike, it would have been impossible to get it through, unless by favor of the managers.]

Subsequently, however, the following message was received:

SAN FRANCISCO, 4th.

(W. W. Burhans, care of O. H. Palmer)

In San Francisco three operators' salaries reduced; they have the notices in their possession. Three operators discharged for being members of the T. P. L.; eight operators in Sacramento circuit were discharged for refusing to stand by San Francisco operators; three operators' salaries reduced there. This was beginning.

So far, the message appears to have come from Mr. Jacobs, although his name is not signed to it. The following concluding sentence appears to have been added by Mumford, the omission of Jacob's signature making the message read as if it was all sent by Mumford.

Prevent my silence being construed into assent in any particular, my frank being attached to the message.

(Sig.) GEO. H. MUMFORD.

Tuesday morning W. W. Burhans, C. G. Ryan and J. M. Peters, who had been appointed a Committee to negotiate with the Western Union officials, addressed to Mr. Palmer a communication enclosing the resolutions adopted Monday evening.

To this communication the following reply was received:

EXECUTIVE OFFICE, W. U. TELEGRAPH,
145 BROADWAY, NEW YORK, Jan. 4, 1870.

W. W. BURHANS, C. G. RYAN, J. M. PETERS, Committee:
GENTLEMEN—Your communication of this morning has been received, in which you state, in the form of a resolution, that the members of your association have been informed that this company have reduced the salaries of certain operators at San Francisco, and that the members of your association at San Francisco ask the members everywhere to aid them in preventing this reduction, and in which you ask that the salaries of members at that point be not reduced, and that the operators there who have been discharged for refusing to submit to this reduction be reinstated, and in which you also state that in case the Executive Committee of this company return an unfavorable answer to you, that the Grand Chief Operator of the Telegraph Protective League be requested to order all members of your organization to aid your brethren in San Francisco, by immediately suspending work.

In reply I have to state that no salaries of operators in San Francisco or elsewhere have been reduced, and that your information is without foundation in fact. When your Mr. Burhans called upon me yesterday I stated to him, verbally, that he must be laboring under a mistake, as there had been no intimation given to this office of any contemplated reduction of salaries,

and at his request I asked Mr. Mumford, our agent at San Francisco, to state the facts. I give his message in reply to such inquiry, in which he states as follows:

"I have reduced no salaries here nor anywhere else, and have had no intention of doing so. Two men were discharged in San Francisco because I was satisfied that they were trying to create dissatisfaction and make mischief, and because the force in the office was larger than was necessary to do our business. The plea of a general reduction is without the slightest foundation as matter of fact. The only changes made were increases, not reductions, and the salaries now are as high as ever have been paid here before."

I rely with implicit confidence upon the truth of this statement, and the action of this company will be governed accordingly. We can permit no combination nor organization of men to dictate to us who or how many persons we shall employ for the transaction of our business. We approve the action of Mr. Mumford. Very respectfully, &c., O. H. PALMER.

In order that no effort should be wanting to place themselves and the employees of the company in the right, the Committee addressed a second letter to Mr. Palmer, as follows:

NEW YORK, Jan. 4, 1870.

O. H. PALMER, Secretary:

SIR—We have received your communication in answer to ours, presented to you this morning, in which you assure us, on the authority of Superintendent Mumford, that the grievances do not exist, that no salaries have been reduced at San Francisco, nor any members discharged for refusing to submit to reduction of salary, &c. In reply we would state that officers and members of our organization at various points, believing that the grievances complained of by the San Francisco members do exist, have already suspended work. Officers and members at other points are now waiting for this committee to report and decide what action they shall take. We therefore propose that you instruct Superintendent Mumford to, or assure us that you will, reinstate those members at San Francisco, if any, who have been discharged for refusing to submit to a reduction of salary, and that members who have already stopped work at various points be reinstated in their former positions at the same salaries as heretofore, and that their salaries for the time lost while on strike be deducted from this month's pay.

If this proposition is agreed to, then this committee assure you that the various points will resume their duties at once, and members at other points, who are waiting to hear results of our negotiations, will be promptly notified that the difficulty has been amicably settled.

If this proposition is not acceded to, the committee will feel constrained to report that the negotiations have been very unsatisfactory, and to recommend that the Grand Chief Operator of our organization take action in accordance with the instructions presented to you this morning. We are compelled by those resolutions to request a reply to this by or before three P. M. to-day. Very respectfully, &c., W. W. BURHANS, C. J. RYAN, J. M. PETERS, Committee.

It will be seen that the propositions of the Committee were eminently reasonable, and looked only to the correction of wrongs, in case, upon investigation, the allegations upon which the difficulty was based should prove to be correct. It would be supposed that, if really desirous of arranging matters amicably, this proper and reasonable proposition would at once have been acceded to. On the contrary, Mr. Palmer returned the following answer, in which it will be seen he declines to negotiate upon any terms other than a complete surrender on the part of the employees:

GENTLEMEN—I am in receipt of your reply to my communication of this morning, in which you propose, first, that we instruct Superintendent Mumford, or assure you in writing that he will reinstate such members of your association as have been discharged at San Francisco, for refusing to submit to reduction of salary; and, second, that members who have already stopped work at various points be restored to their former positions.

In respect to the first proposition we have already assured you that there has been no reduction of salary. I can, therefore, issue no instructions to Mr. Mumford upon the suppositions suggested by you. In respect to your second proposition, I have no reports from superintendents in respect to operators who have left our service, or what arrangements have been made for supplying the places of any who may have left the service without such information—and, without the knowledge of the facts, I cannot in advance determine what action may be right, or what may be due to new operators engaged, or to those whose places it has been necessary to supply.

When such questions are presented, in the usual way, they will be considered in the same just and liberal spirit which this company has always manifested in its dealings with its employees.

I am satisfied, from the perusal of your two communications, that you have been grossly imposed upon by representations of one or two of your members in California, and that your alleged grievance is without any foundation in fact, and I am surprised that, after the positive assurance given by me in my communication of this morning, your organization did not at once concede the fact, and resent the imposition practiced upon you.

Very respectfully,

O. H. PALMER.

This, of course, closed the negotiations, and the signal was given over the wires, and at ten minutes to four o'clock the operators in the main office of the company, at 145 Broadway, filed out in procession, leaving the hooks full of messages, and only one or two operators to attend to them. They were followed by about half the lady operators, who here, as elsewhere, realized that the contest was for them, as for every other telegraph employé, and therefore were not inclined to aid the common enemy in the emergency.

At the same time the operators in Philadelphia, Baltimore, Washington, Boston, and other principal offices, who had not previously struck, quit their instruments, and the business of the company practically came to a stand still.

In the evening a meeting of the League was held at

the Western Hotel in Cortland street, at which the best feeling prevailed. The following card was adopted, and ordered to be generally published and distributed:

To all Members of the Telegraphers' Protective League.

The hour has arrived when prompt and united action is to decide the future welfare of the fraternity. The reduction of salaries which has been attempted at San Francisco is, we believe, but the forerunner of similar action to be taken throughout the country, should it be found that we were willing to submit. The organization which has inaugurated this resistance extends from the Atlantic to the Pacific—from the Great Lakes to the Gulf. We have used every honorable effort with the Executive Committee to end the strife by reinstating our brethren at their old salaries. The authorities, by refusing to do so, have expressed their determination to crush us. The issue now is the life of the League, as well as to sustain our San Francisco brethren. We accept the challenge cheerfully, believing that success will follow this first effort to maintain our rights. We control all the important telegraphic points in the United States. We only ask of our brother operators outside of the organization not to come in and fill our places. It will merely prolong the contest without changing the result. With renewed confidence in the justice of our cause, the operators of the North, East and South to-day join hands with their brethren of the West, determined that we will be men, even while laboring for a gigantic corporation.

R. W. POPE, Chief Operator.

R. J. HUTCHINSON, Assistant.

W. W. BURHANS, Grand Secretary, T. P. L.

Our venerable friend, the editor of the *Journal of the Telegraph*, Dr. Cure, M. S. Roberts, and others occupying clerical positions, were called in, and with the aid of the managers were able to do a portion of the Associated Press business during the evening. South of Washington the lines were entirely closed, it being understood that the Southern operators had gone out in a body. At the East only the Boston operators had struck, but the way offices of importance were to be vacated on Wednesday morning. At the West a few operators, with such assistance as can be obtained from fossils, office managers, superintendents, &c., manage to struggle along, but, with the exception of press reports, business is practically suspended.

During the day and evening the officers of the League were flooded with despatches from all quarters, a few of which we publish, to show the feeling and determination which animate the telegraphic fraternity:

BOSTON, 4.30 P. M.

The Western Union boys left. There are about three left on duty.

DAVENPORT, IOWA, 4th.

Railroad men been ordered to take charge of our office, and demand keys and books. They were members, and have nobly refused, and been dismissed by their Superintendent. Stand by us.

H. H. MATLOCK.

BALTIMORE, MD., 4th.

Baltimore quit at same time as New York. We are all cool, and will stand firm.

C. G. STUART.

ALBANY, N. Y., 4th.

We are all out.

RICE.

LOUISVILLE, Ky., 4th.

Have just notified our General Superintendent that unless company accede to terms by four P. M., to-day, we withdraw collectively. Stand firm. South will go with us. SOMERVILLE.

PITTSBURG, Pa., 4th.

Promptly at 9.30 A. M. all the operators of the Western Union office left their instruments, pausing for a moment together, and then leaving the office in a body. Not any operator. Ex-operators have been pledged to support us. We are firm and determined to aid our brethren to the bitter end.

H.

WASHINGTON, 4th.

We stopped work at 4 P. M. The manager and chief operator are the only men at work.

HARTFORD, 4th.

Fall River, Providence, Worcester, Springfield, New Haven and Hartford will stop in morning. Also Meriden and several small offices.

STONE.

Just received following:

CHICAGO, 4th.

OMAHA, 4th.—Only one message from the West. Indicates strike still going on. Men here steady and sanguine. Western Union Telegraph Company fighting hard, and will fight to very last. Toot out your whole force and show our spirit. W. U. Co. have not a single recruit. Several men refused very tempting offers. No compromise without consultation.

B.

We could fill columns of our paper with similar despatches, but the above will suffice.

At a meeting of the operators in this city, held Wednesday afternoon, at the Hall of the League, No. 270 Grand street, continued and increased enthusiasm was manifested, and confidence in ultimate success, which confidence is shared by all engaged in the movement.

The committee appointed to investigate and report upon the causes of the strike submitted the following:

The Telegraphers' Protective League claim that the cause of the strike has been entirely misrepresented by the officers of the Western Union Company; that they, the telegraphers, are not on the offensive but on the defensive; that three operators' salaries were reduced 25 per cent. in the San Francisco office, and also salaries of eight operators in the Sacramento office, who, upon their refusal to submit to the reduction, were discharged, upon which the operators of those offices abandoned their instruments and communicated their grievances and action to their fellow telegraphers in the East, who all, to a man, have stopped work, and do not propose to work until justice is done to their brethren on the Pacific coast, where the reduction of salaries first com-

menced. This is the true cause of the telegraphers' strike, all statements of the monopolists to the contrary notwithstanding.

W. W. BURHANS,
C. J. RYAN,
J. M. PETERS,
TRA C. BELLows,
A. J. FLOWAY.

The following statement of the facts in the case was, by direction of the meeting, prepared by the committee by whom the negotiations with the Executive Committee of the Western Union were conducted, and furnished to the press for publication.

NEW YORK, Jan. 5, 1870.

The difficulty now existing between the Western Union Telegraph Company and the members of the Telegraphers' Protective League has become a subject of public interest, and it is this fact that prompts us to fairly state our position in the matter. Erroneous impressions have been conveyed by the publication of reports in the newspapers, ostensibly with a view to general information, but really in the interest of our late employers. These impressions it is our duty to counteract. In doing so, however, we desire it to be distinctly understood that our only motive is to correctly inform the public, and not to create false sentiment by an *ex-parte* statement in relation to the affair.

Our organization is composed of independent divisions, known as circuits. One of these is designated as the Grand Circuit, and is entrusted with the performance of duties incumbent on that position. The preamble of our constitution sets forth that "the nature of our business is such that a vast combination of capital must necessarily intervene between our most intelligent efforts and a commensurate reward of an appreciative public, and that we seek not only to protect our own rights but those of the public, by retaining in our ranks the most worthy and skillful operators in the country, instead of allowing them to be driven from the profession, through the unjust exercise of superior power, wielded by the willing agents of our employers, who are ever seeking official commendation by the exhibition of parsimonious economy."

Our organization extends to and includes San Francisco, Cal. On Friday, December 31, 1869, our Grand Chief Operator received a message in cipher, informing him that on Monday, January 3, the members at San Francisco would decline to submit to a reduction which the company proposed to make in their salaries. The next day (Saturday, January 1) we received another despatch from them, informing us that two members had been discharged for refusing to submit to the reduction; that they should resist it by stopping work, and calling upon other circuits to aid them. Accordingly, on January 3d they suspended work. This committee was appointed at a meeting of the New York circuit, and instructed to negotiate for an amicable settlement by requesting that the salaries of the members at San Francisco be not reduced, and that those who were discharged for refusing to accede to the proposed reduction be reinstated. In reply, Western Union officials stated, on the authority of Mr. Mumford, their agent at San Francisco, that no salaries had been reduced.

In a second communication we endeavored to effect an honorable, peaceable settlement, insisting upon the reinstatement of members whose salaries had been reduced, and assuring the Western Union Executive that members at other points, who had also suspended work, would resume their duties. The proposition was rejected, and the case at present stands thus: The Western Union officials rely implicitly upon Mr. Mumford's statements; the members of the League believe that the statements of our circuit officer in San Francisco are strictly true, and shall continue to believe them until proved untrue. In the latter event we will return to our duties at former salaries, guaranteeing to members and non-members who have aided us in this difficulty the benefits and protection of our League in the future. In the meantime this committee awaits the action of the Western Union Telegraph Executive, looking to a peaceable settlement of this difficulty.

W. W. BURHANS, Chairman,
C. J. RYAN,
J. M. PETERS, Committee.

The Executive Committee of the Western Union Company have published a statement to the public in regard to the strike, which presents their side of the difficulty. After restating the alleged causes and incidents of the affair already given by us, they go on to state, in reference to the proposition for a settlement made by the League, as hereinbefore published in the letter of the Committee, "With neither of these demands could the company comply. It would have been a gratuitous insult to a faithful officer to send him instructions based upon a state of facts of which he had denied the existence, while on the other hand the executive officers could not stipulate in advance to restore to their places and pay persons who had left their employ without a shadow of reason, and in a manner and for the purpose of embarrassing the company's business (as was avowed in the resolutions adopted at the operators' meeting), and whose places had, perhaps, been supplied by new engagements. Such pledge would have interfered unjustifiably with the functions of division and district superintendents, and would have involved the violation of our contracts with innocent parties."

In conclusion, the committee say—"Fortunately for all concerned, enough loyal men remain to command the situation, and to serve as a nucleus to new recruits. Such is the present situation of this company. It has force enough at this and all other important points to do the business which shall be brought to it, and the numbers are increasing as rapidly as they can be put to work. With forbearance and co-operation on the part of those whose interests it seeks to subserve, things will speedily right themselves, and the justice of the company's position will be vindicated."

We give these points of this statement as a part of the history of the matter. The whole statement is too long for our columns. The officers of the company of course make the best possible presentment of their case. It

may be true that the number of plugs in their employ is increasing, but we know that of the good operators who at first failed to participate in the strike several have since joined their brethren. The operators who have gone out comprise nearly all the first class operators in the employ of the company. If the business of the Western Union Company can be successfully and profitably conducted by the cheap and inferior operators whom from necessity they are forced to employ, then its managers have not shown the regard for economy with which they have generally been credited, in employing the higher priced class of operators. The public will not be likely to entrust business to these incompetent operators after a little experience of their manner of transmitting and receiving despatches.

On Wednesday the only two operators remaining in the Washington office, Messrs. Clark and Marcan, joined their brethren, leaving the office to manager Tucker and two or three plugs picked up on the street, or wherever they could be found. The operators in the New Orleans and in all the Texas offices, and at Portland, Me., and other important stations east of Boston, not hitherto included in the strike, joined in the movement. The position of the Western Union Company is hourly growing worse, and with the patience, moderation, and wisdom on the part of the operators, the company must eventually yield. The loss to the company pecuniarily cannot be less than ten to fifteen thousand dollars per day, besides the transfer of business to their rivals—much of which can never be regained. Fifty messenger boys were discharged from the main office in this city on Wednesday, there being nothing for them to do.

We are in receipt of columns of resolutions adopted at meetings of the operators at Boston, Washington, Chicago, Cincinnati and other places, but our limited space will not admit of their publication this week. They all breathe the same spirit of determination to secure justice, and to maintain their present position until it is assured.

We would advise the operators not to hang around the offices of the company. If you have any business at your old offices transact it, but don't give the company or its officials any cause to complain of your conduct in this respect.

Aid from the N. T. U.

THE following letter was received by the G. C. O. of the Telegrapher's Protective League on Thursday:

NEW YORK, Jan. 6th, 1870.

To R. W. POPE, G. C. O., Telegrapher's Protective League.

Sir—By resolution of the Executive Committee of the National Telegraphic Union, adopted January 5th, inst., Two Hundred Dollars of the fund remaining in the treasury of the Union is appropriated, if needed, to sustain the cause of right and justice in the pending difficulty between the managers of the Western Union Company and its employees.

The draft of the proper officer of your organization upon Mr. A. L. Whipple, the Treasurer of the Union, will be approved by the President, Mr. W. H. Young, and paid at sight.

Respectfully yours, F. L. POPE, Cor. Sec'y.

Who is Kates?

THE Vice-President of the Western Union Company received the following despatch from a humiliated individual, named KATES, heretofore unknown to fame, and furnished it for publication to the press. Who is KATES? Will some Southern friend post the readers of THE TELEGRAPHER in regard to this sensitive, humiliated, but proud Superintendent? That he may no longer linger in merited obscurity, we introduce him through our columns to the appreciative notice of some thousands of telegraphers, who, otherwise would probably never hear of him:

LYNCHBURGH, VA., Jan. 5th.

I have just returned, after an absence of one week in Tennessee, and now realize the extent of the treacherous and disgraceful movement against the company, and am deeply humiliated to learn that some of the Southern operators have proved faithless, but am proud to say that none of the operators of this district have deserted their posts. I am arranging to send a few operators to other districts. The success of this movement would be a lasting reproach to the profession. I hope the company will not yield.

(Signed).

J. W. KATES,

Superintendent.

Reduction on Cable Messages to Cuba.

A REDUCTION on cable messages to and from Havana took place on the 1st of January. Messages of ten words will be sent from any office of the Western Union Telegraph Company east of the Mississippi for five dollars, gold, and west of the Mississippi for seven dollars and fifty cents.

PERSONALS.

Mr. JAMES HENRY, formerly travelling agent of the Grand Trunk Railroad, is now located as agent and telegraph operator of the St. Louis, Vandalia and Terre Haute R. R., at Collinsville, Illinois.

Mr. GEORGE G. HADLEY, formerly of the Western Union Lafayette, Ind., office, has accepted a position in the Chicago office of the same company.

Mr. WILLIAM V. STEPHENS, alias "Jones," of the L. N. A. and C. Railway, has taken charge of the State Line Indiana office.

Mr. A. B. GUNN has been appointed agent and operator of the Toledo, Peoria and Warren Railroad, at Secor, Ill.

Mr. LYTLE G. ANDERSON, who left the Chesapeake and Ohio R. R. line to go South, has concluded to remain in Virginia, and is now manager of the O. A. and M. R. R. office in Alexandria, Va. "Dieu vous garde," Lytle!

Mr. E. ROSEWATER has resigned his situation in the Western Union office at Omaha, Nebraska.

Mr. C. E. WERLELE has been transferred from the North Platte, Neb., to the Cheyenne W. T. office of the Union Pacific Railroad.

Mr. JNO. F. ARMSTRONG has charge of the night office of the L. and N. R. R., at Bowling Green, for the present.

Mr. BIBB, formerly of Danville, Ky., has taken charge of the Richmond Junction office of the L. and N. R. R., in place of Mr. FRANK ANTHONY, who is assisting at Lebanon Junction.

Mr. GEO. W. ATKIN, formerly of the Pacific and Atlantic Nashville office, has accepted a position in the Train Dispatcher's office of the Louisville and Nashville Railroad, at Louisville, Ky.

Mr. FRANK HOWELL, night operator in the Train Dispatcher's office L. and N. R. R., has resigned.

Mr. DRAKE, formerly of Richmond, Ind., takes the situation vacated by Mr. HOWELL's resignation.

Mr. R. M. STAPP, formerly night operator on the L. and N. R. R., at Bowling Green, has been relieved.

Mr. W. W. FORBES has been appointed chief operator of the Central Railroad of New Jersey, from January 1st, 1870.

The Western Union Co. have opened their office in the capitol at Albany, N. Y., for the winter. It is in charge of JOHN GAY.

The A. and P. Co. have also opened an office there, which is in charge of S. J. WHYTE.

THE TELEGRAPH.

Official Statement, Western Union Telegraph Co.

	Nov., 1869.	Nov., 1868.
Total Receipts.....	\$600,486 77	\$607,728 05
Total Expenses.....	402,025 70	383,024 46
Net Profits.....	\$198,461 07	\$224,703 59

(By French Atlantic Cable.)

The French Government and the Atlantic Cable.

THE following communication of the Director-General of telegraph lines in France has been called out by the strictures in the Annual Message of President Grant on the Government control of messages by that line, and explains what the official supervision of despatches really is, correcting erroneous impressions relative thereto in the United States:

OFFICE OF THE DIRECTOR-GENERAL OF TELEGRAPH LINES.

The Message of the President of the United States to Congress, at its opening, as it is published in the newspapers, contains, in the part relative to the French Transatlantic Cable Company, an assertion which this administration considers it a duty to correct. It states, in substance, that, according to the terms of the concession, despatches from America transmitted by that route are subject to examination and control of the French Government, and it is evident that the passage was written under the impression that such are the conditions of the concession.

This administration exercises no control of that nature, either over despatches from America or from any other quarter; but it is its duty to see that communications are transmitted over the cable in the order of their filing or of their reception at Brest, and that there is no favoritism in this respect. It must, also, on account of the telegraphic monopoly held by the Government, see that no despatches are clandestinely introduced upon the line, and so avoid the tax which legitimately accrues to the State. Such is the double aim of its control—to

protect at once the interests of the public and of the treasury.

Finally, the conditions under which this department exercises control over the business of the line are without political intention. Its subordinate employees are charged with the task, and their duty is restricted to the verification of ciphers—such as the signals of place and time of filing and of reforwarding—and the number of words which form the basis for application of the Government tax. Again, the most of the despatches—particularly those destined for Nantes, Bordeaux, Tours, Toulouse and those sections—arrive at their destination without passing through Paris at all. The same is true of correspondence addressed to any part of Spain or England, such messages being transmitted direct from Brest to London.

TELEGRAPH BREVITIES.

THE telegraph line between the City of Mexico and Toluca has been completed.

Captain R. B. Oldfield, of the Royal Navy, an experienced officer, has (December 10th) been granted leave by the British Admiralty, and has proceeded, on behalf of the Telegraph Construction and Maintenance Company, to Siam and the Malay Peninsula, for the purpose of exploring certain routes, by which that company proposes to establish a telegraph communication from Burmah, the Tenasserim Provinces and Siam, with Penang, so as to throw the traffic upon the British Indian Extension Company's cables, which will be laid in the year 1870, between the Straits of Malacca and Ceylon.

Dr. Milliot, of Paris, has discovered a new method for extracting projectiles from wounds, by applying a piece of soft iron to the afflicted part, and magnetizing it by means of an electric current. In this manner the doctor, with a rather complicated apparatus, can attract fragments of shells, and iron projectiles coated with lead, from various small distances, according to the force of the current.

An incendiary fire at Whitehall, N. Y., on Monday last, destroyed offices of the Western Union and Montreal Telegraph Companies.

Mr. Sterns, of Boston, Mass., has just placed three of his double transmitters on the lines of the Great Western Telegraph Company, and they are said to work admirably and greatly increase the capacity of the wires for business.

Another Atlantic Telegraph.

IT is stated that a company has been incorporated under the title of the International South Atlantic Transatlantic Telegraph Company (limited), and will be shortly introduced to the public, for the purpose of establishing telegraphic communication between Europe and the Continent of South America, under the concessions obtained by Mr. P. A. Balestrini, from the French, Italian, Portuguese, Danish and Brazilian Governments, and that the cable has already been contracted for by the firm of Albert Gerard & Co., of Paris, London and Hamburg.

An Operator Killed.

A YOUNG man, formerly a telegraph operator, whose name is supposed to have been Hulsizer, of Phillipsburg, N. J., who had taken a situation as brakeman on the Morris and Essex Railroad, was hit by the locomotive and instantly killed, as his train was leaving Newark Station, on Dec. 30th.

Comforting.

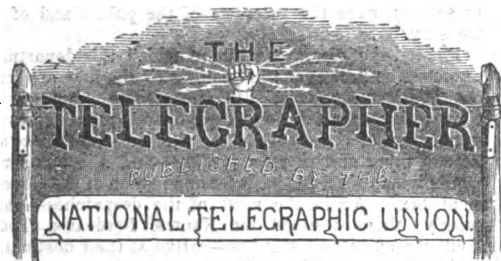
PROF. J. D. STEELE, of Elmira, has recently been investigating the electric storms in the sun, and declares that in them he finds no cause for alarm. He thinks these storms are no more violent than they have been in past ages, and does not believe their effects will be disastrous to our globe.

Congratulatory.

MANAGER ALFRED S. BROWN, of the main office of the Western Union Co., in this city, last week indulged in a vacation, and returns from the east a Benedict. He was married at Milton, Mass., to Miss ANNIE M. SHELDON, of that place. We congratulate them on the happy event, and trust their future may be happy and prosperous.

BORN.

GRAVER.—To W. A. GRAVES, manager of the N. Y. C. & R. R. Telegraph office, Albany, N. Y., Jan. 2d, a son.



SATURDAY, JANUARY 8, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.
 Vice-President W. O. LEWIS....New York.
 Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.
 Recording Sec. W. W. BURHANS...Box 6010, P. O., New York.
 Corres. Sec.F. L. POPE.....Box 6010 P. O., N. Y.

THE STRIKE.

AGAIN we are compelled to largely occupy the columns of THE TELEGRAPHER with the accounts of a difficulty between telegraphic employes and employers. It is with sincere regret that we witness the occurrence of any trouble between the operators of the Western Union Company and its managers. The lines of that company are so extensive, its business so great, and its employes so numerous, that a strike cannot in any event fail to entail much loss and suffering. As yet our accounts of the origin of the difficulty are somewhat confused; but, notwithstanding the denials of Sup't MUMFORD, it appears to be pretty well settled that he has attempted to punish his subordinates for connecting themselves with the Telegraphers' Protective League, and at the same time to establish a partial reduction of salaries. Against this the operators on the Pacific Slope have struck, and in response to their demand their Eastern brethren have also gone out, and the operations of the Western Union Telegraph Company are for the time practically paralyzed, the competing lines flooded with business, and hundreds of operators standing idle.

The California operators doubtless had sufficient cause for a strike, and their Eastern brethren were bound to go with them; but we regret that before proceeding to extreme measures they had not appealed from MUMFORD to the Executive Committee of the company. If the Executive Committee had refused them redress, and MUMFORD had been sustained in his aggressive and tyrannical policy, then, at a given time, there should have been a simultaneous strike over the whole line. There may have been circumstances connected with the movement, at present unknown to us, which necessitated the apparently precipitate action. We wait with much interest and anxiety further advices on this point. Our Cincinnati friends also appear to have acted rather hastily, and without due consultation with their brethren elsewhere. However, the strike having commenced it must be carried through, until the grievances complained of have been redressed, and the men who have been maliciously and improperly discharged are reinstated or provided for.

An earnest attempt was made by the officers and members of the League in this city to make an arrangement which should obviate the difficulty and terminate the strike. Mr. O. H. PALMER, of the Executive Committee, with whom the negotiations of the committee were conducted, met them in a spirit of uncompromising obstinacy, and refused to treat upon any terms other than a complete surrender of the operators, upon such terms as the company should see fit to accord them as a matter of grace. Of course this was an impossibility, and all hope of an arrangement having proved fallacious, the signal was given and the strike became general all over the Western Union lines.

Had not Mr. ORTON, the able executive officer of the Western Union Company, unfortunately been absent in Europe, the result would in all probability have been different. As a business man Mr. ORTON would have realized the damage which a strike must prove to the property of the company, and as a just man he would have recognized the propriety and moderation of the proposition for a settlement made by a committee of the League. He would not have allowed his feelings and prejudices to influence his judgment. For these reasons we say that his absence at this time is a misfortune to both parties. If the company is to be saved from utter ruin his speedy return is eminently desirable. Had Dr. N. GREEN, the first Vice-President of the company, been here, the affair might probably have been compromised. As it was, the member of the Executive Committee least calculated to deal satisfactorily with the emergency was the only one who could be reached.

We trust that operators, whether members of the League or not, will stand aloof, and not aid in the subjugation of their brethren. Railroad operators, especially, are requested not to accept situations in place of any of the strikers. The battle is for every telegraph employe, and in its result every man and woman employed is vitally interested.

Washburne and the Postal Telegraph.

It is a well understood fact that the details of any art or science cannot be safely entrusted to mere theorists. Members of the Telegraphic Guild have reason to know that there is no field which opens so many pitfalls to the feet of adventurous laymen as practical telegraphy.

Yet—such are the mysterious ways of Providence—it is given to some to know, as it were by intuition, what others master only by arduous labor, exhaustive research and patient experiment; and herein lies the distinguishing feature of that God-like attribute which men call genius. If our era has produced few minds endowed with this divine afflatus, let us, nevertheless, pay the homage due to these, nor seek to establish a theory of general excellence by churlish endeavors to reduce the lofty genius to the level of the common herd.

It has been asserted, of old, that genius is not hereditary. We have indubitable evidence that it runs in families. And how can we better support this assertion than by introducing the distinguished name which heads this article? Space forbids us to search out the excellencies of all the gifted brotherhood; nor do we need thus to multiply proofs to make good our venture. Let us consider the claims of ELIHU briefly, for a mightier than he is come after him.

To the professional skill of men whose daily pursuits compelled them to a minute investigation of every ramification of telegraphic business Mr. ELIHU B. WASHBURN, while yet a member of the House of Representatives, opposed his own knowledge of the subject, gained from brief consideration of the projects and specifications of interested schemers, and, with line for line and argument for argument, demonstrated, to his own entire satisfaction, the wisdom of his proposition for a postal telegraph service. We do not say unadvisedly that Mr. WASHBURN's knowledge of the subject was gained "from brief consideration of the projects and specifications of interested schemers." Had he made the telegraphic system his sole study, from the time when he first mounted his hobby until he vacated his seat in Congress, his research would have been too brief for the subject; and with Mr. G. G. HUBBARD as a Mentor (whose fallacies we have frequently demonstrated) he could not obtain other than a partial view of it. Genius, therefore, and genius only, could have given Mr. WASHBURN that comprehensive knowledge of the theme which he displayed in his efforts to inaugurate the Postal Telegraph system; and if he did not succeed in con-

vincing his contemporaries and the country of the beneficence of his plans, let the historian chronicle, to the discredit of this age, another example of auguries unheeded, of Wisdom's counsels spurned.

But, as we have said, genius runs in families. The conflicts with wind-mills and wind-bags did not cease with the departure of ELIHU. His mantle fell—to the maintenance of our theory—on a brother WASHBURN. And now comes this brother—CADWALLADER by name—and declares his intention to do away with the present system of telegraphs, to vest the ownership of all telegraph lines in the Postmaster-General, and to give to this people such facilities in the postal telegraphic way that, for the paltry sum of twenty cents, the shipwrecked mariner on the coast of Florida may console his sorrowing wife in the forests of Maine, or the prodigal wanderer in the Sierra Nevadas call upon his wealthy parent—a denizen of this Metropolis—for fresh supplies of cash. We gave, in our last issue, a sketch of Mr. C. C. WASHBURN's bill, and it will only be necessary now to allude to some of its most salient absurdities.

1. It prohibits all city telegraphs, gold and stock reporting lines, and the many telegraphic conveniences which private capital and enterprise have developed to meet the wants of large communities, and which the Government can operate as well and as consistently as it can control the traffic in peanuts or the sale of oysters at Fulton Market. Why not prohibit, also, the use of electric indicators in hotels?

2. It proposes to take all the telegraphic property of existing companies "at their cash value." Doubtless, if Mr. WASHBURN owned a desirably located business house, which some whimsical or stupid legislator fancied the Government needed, he (Mr. W.) would cheerfully transfer "all his right and title therein" to said Government, on its contracting to pay him the "cash value" of the bricks and mortar. But, unfortunately for our poor country, all her citizens are not so patriotic as Mr. WASHBURN; and for the Government to compel any citizen to part with his property for less than its market value, at least, would be a dishonest as well as a tyrannical stretch of authority.

3. If any telegraph company shall fail or refuse to "stand and deliver," as Mr. WASHBURN's law would direct, then the Government will not even pay "cash value" for its lines, but will build new lines along the routes of such company for its own use, the company being, at the same time, prohibited from using its wires under penalty of \$200 fine for each message transmitted. In other words, the company's property would be destroyed, absolutely and utterly! "O, wise young judge!"

4. The bill contemplates a magnificent increase of telegraphic facilities, by the building of branches and extensions, to take in all post-offices not more than twenty miles distant from present telegraphic routes, the gross receipts of which are not less than \$100 per annum. We do not know how many thousands of additional non-paying offices this would establish, but we venture to say that the Western Union Company would not contract to carry out and continue this part of Mr. WASHBURN's scheme for a bonus of the "cash value" of their present lines. In spite of this enormous increase of expense (without any adequate return), and the reduction of rates to a uniform scale—which is about one tenth of the average tariff of present companies—Mr. WASHBURN thinks this Postal Telegraph service will not only be self-supporting but will make up the annual deficit of the Post-office Department. The truth is, that one year's trial of this Quixotic scheme would render the "dear people" very anxious to sell out their telegraph lines, facilities, franchises, etc., "cheap for cash," and if they could not find a purchaser they would be glad to give them away. Perhaps Mr. WASHBURN foresees such a result.

Private enterprise makes, and will continue to make the best possible returns on capital invested. Yet we

see the stock of the wealthiest and most powerful of the telegraph companies offered in the market to-day at a discount of nearly seventy per cent., and the stocks of less solid companies are of nominal value only, though the affairs of the Western Union Company (to illustrate by example) are wisely and economically administered, and the tariffs are proportioned to distances and the difficulties of maintenance on certain routes. Will Mr. WASHBURN have us believe that the Government, always lax and extravagant in the conduct of its business, can assume burdens which this company dare not encounter, abolish all distinctions in price, reduce tariffs five hundred or one thousand per cent., and yet make these lines pay the expense of such a *regime*?

That Mr. WASHBURN should have failed to present the Postal Telegraph scheme in a tempting light is not surprising. The project itself is an absurdity. But that he should have fallen into such a labyrinth of ridiculous, dishonest and stupid blunders, in presenting his case, is matter for wonder, and—when we reflect that the author claims to represent the people—of indignation.

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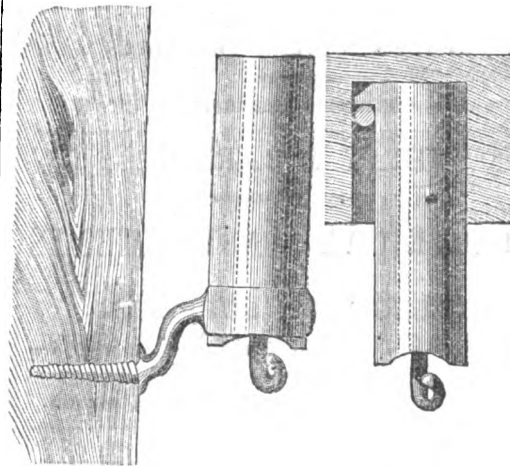
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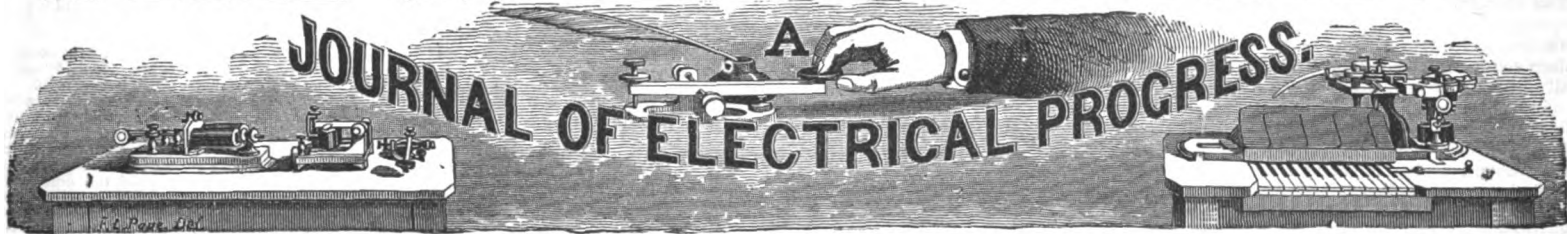
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THE TELEGRAPHER.



Vol. VI.—No. 21.

New York, Saturday, January 15, 1870.

Whole No. 183.

THE STRIKE ON THE WESTERN UNION LINES.

OUR account of the strike of the employés of the Western Union Company, in *THE TELEGRAPHER* of last week, closed Thursday afternoon. The situation on Friday was not materially changed. The enthusiasm of the strikers was kept up, and meetings of telegraphers were in constant session at the larger places where the employés had gone out. The embarrassment of the Western Union Company was but slightly relieved, but their situation was somewhat improved. They reopened a portion of the offices south of Washington, distributing such operators as had not struck to the more important offices.

The commercial business of the company had shrunk to small dimensions, and the receiving office at No. 145 Broadway, usually thronged with customers during business hours, was almost deserted. Occasionally a person would drop in with a message and relieve the prevalent dullness for a moment.

Business for New Orleans and points at the extreme south was refused, there being no operators left to carry on the offices.

Friday evening the following proclamation was issued by Mr. O. H. Palmer, on behalf of the Executive Committee:

EXECUTIVE OFFICE,
WESTERN UNION TELEGRAPH COMPANY,
145 BROADWAY, NEW YORK.

To the Public.—Since the publication, this morning, of the card signed by the officers of this company, explaining the circumstances out of which the strike of operators arose, a full and detailed statement of what occurred in California has been received from the company's agent, Mr. Mumford. They are as follows:

About the middle of December Superintendent Gamble, desiring to re-adjust the compensation of the employés at San Francisco according to the value of their services, gave notice to two operators that after January 1 their salaries would be reduced from \$120 to \$115 a month, and to a third that his salary would be increased from \$100 to \$120 a month, making an increase in the aggregate compensation of the three of \$10 a month. Acting on these notices, as is supposed, the operators at San Francisco united in presenting a schedule of salaries, which they asked to have adopted. In this schedule the two salaries which Mr. Gamble had proposed to reduce remained as before, and an increase of four others was asked for.

Mr. Mumford so far assented to the schedule as to make no reduction of salaries, and allowed a portion of the proposed increase. He at the same time informed the operators that the force in the office was larger than was justified by the diminished business, the number of messages being less than usual, and the receipts lighter. The operators themselves admitted that more men were employed than was strictly necessary. To bring the force thus into harmony with the wants of the business two men were dismissed, but they were not the men whose salaries Mr. Gamble had in the first instance proposed to reduce. The salaries of those men remained unchanged, although one of these was dismissed after the reduction of the price above mentioned; a fourth man refused to work at the schedule price, although it was \$10 a month higher than he had ever before received. Out of this state of things the strike arose. The facts thus explained fully support Mr. Mumford's original statement that he had reduced no salaries, and had no intention of doing so. He had, in fact, increased them upon the petition of the operators themselves, and the only man who appears to have left because he was dissatisfied with his compensation, refused to work at an advance in his salary of ten dollars a month. The strike then is not, as the operators here have alleged and supposed, a strike in resistance of a reduction of wages—general or special—but in support of the claim of an individual whose salary has been raised, but not to so high a figure as he desired. It cannot be denied, in view of all the circumstances, that the whole body of strikers throughout the Union have left their work with a view and purpose of subjecting the business of the entire country to delay and derangement, because some John Smith in California, demanding an increase of twenty dollars in his salary, can get only ten dollars. This is the real issue, unless it is further claimed that this company shall not be permitted to determine how large a force is necessary to do its business, and to increase or diminish it from time to time accordingly.

O. H. PALMER, Treasurer.

The first defection from among the members of the League in this city was that of Mrs. M. E. Lewis, who came out when ordered, as she was bound to do by her solemn voluntary obligation, assumed upon joining the association. She subsequently reconsidered the matter, however, and returned to her office. If she can reconcile her conduct with the obligations, on account of her sex we will not further denounce her.

Mr. John Lenhart, formerly of Chicago, but of late of 145 Broadway, also repented of his connection with the League and his participation in the strike, and returned to duty on Friday. Whether enforced abstinence from whiskey or an empty stomach made him forgetful of his oath, and word of honor to his associates, we do not know, but such is the fact. Certain it is that of all the members of the League no one has been more persistent in denunciation of the wrong and injustice inflicted upon its employés, by the Western Union Company and its officials, than this same Lenhart, or more anxious for such a combination of the operators as would enable them to influence the terms of their service and treatment. He has seen fit to *perjure* himself, violate his plighted word of honor, and must, therefore, henceforth be regarded by his associates as utterly unworthy of recognition or notice. He will find in the end no profit in his treachery, and that the Western Union Company, however it may love the treason, will have nothing but contempt for the traitor.

On Saturday afternoon the announcement was received from Philadelphia through the Associated Press, the whole power of which has from the commencement been wielded in the interests of the Western Union Company, that fifteen of the League in Philadelphia had also proved false to their vows and returned to work. To complete their humiliation the Superintendent of that district, Mr. D. Bates, forced them to sign the following card:

"Having been fully convinced in our minds that we have been grossly deceived by our officer at New York, and that the present strife between the Western Union Company and its late employés is entirely unjustified on the part of the strikers, I hereby renounce all connection with the Telegraphic Protective League. I feel that we are doing it as an act of justice to the company and to our families."

The names were not appended to this card, but why this last humiliation was spared them we do not know. We hope to obtain the names before this paper goes to press, in which case our readers shall know who they are.

As renegades are always the most zealous and earnest (apparently) on the side to which they have deserted, in order, if possible, to demonstrate their sincerity, so these recalcitrant strikers and leaguers also signed another card, certifying to the ability, experience, etc., of the plugs who had temporarily filled their places while they were off on what they evidently considered a sort of a telegraphic jamboree.

It was difficult for the members of the League elsewhere to believe that such a wholesale defection from their ranks had taken place, but upon investigation it was found to be true that fourteen of those who came out had returned. One of them, however, left again the next day, and has since remained true to his brethren. He was temporarily deceived by the representations made to him, which caused him to take the course he did.

The operators received assurances of sympathy and support from many of the trade organizations and unions, and especially from the typographical unions throughout the country. We have not room to publish the proceedings of these organizations, but they have all been of the most earnest character, fully recognizing the justice of the action of the telegraphers, and their willingness and desire to contribute in any practicable way to make it a success.

At the meeting on Saturday, at the Hall of the League in this city, the following resolutions were unanimously adopted:

Resolved, That we do most heartily assure our brethren throughout the land that we are determined to maintain the position we have taken; that the gross misrepresentations by the Western Union Telegraph Company and the Associated Press of the object of the League, shall not serve us from our purpose to vindicate the officers of the League, and carry this movement to a successful result.

That to the workmen of the United States, who have so unanimously tendered us their aid, we pledge our lasting friendship, and promise them that we shall endeavor to merit their

noble support by our continued resistance to the overbearing monopoly.

The following, which was also unanimously passed, will explain itself:

Whereas, it having come to the knowledge of this circuit that the Western Union Telegraph Company are grossly misrepresenting affairs connected with our organization, by reason of bogus despatches issued by them, and bearing the signature of our Grand Chief Operator, Mr. Pope; therefore, be it

Resolved, That Mr. Pope be instructed to disregard all communications representing that this or any other circuits have returned to work, unless such communications be contained in our official cipher of the League.

On Saturday, advices from L. N. Jacobs, Chief Operator of the San Francisco circuit, of December 27th, were received, detailing the oppression and outrages suffered by the Western Union employés West of the Rocky Mountains, at the hands of Mumford and his satellites, and stating "that reductions have been going on on this coast ever since the consolidation of the Atlantic & Pacific Company with the Western Union. Salaries of operators in Sacramento and Virginia city have already been reduced \$10 per month each, and several San Francisco operators have received notices that reductions will take place on Jan. 1, 1870."

The letter also says: "Should you hear of a strike before this reaches you, you will know that we are but defending our rights, and do not intend submitting to the whims of an overbearing management."

This confirmed the previous impression of the falsehood and duplicity which had characterized the despatches and communications of Mumford—which, however, to those who had had experience of service under him, and knew the man, was unnecessary.

The situation of the Western Union Company, at the close of the first week of the strike, was, as near as could be ascertained, as follows:

In California and Nevada, by closing all the small offices, and concentrating the few operators who retained their allegiance to the company at the principal points, and by superintendents, office managers, &c., taking to the key again for the time being, they succeeded in obtaining sufficient force to do the press business, but could handle but little commercial business. From the commencement of the difficulty the transmission of the press reports, with some degree of regularity and promptness, has been the object of first and greatest solicitude to the managers of the company, and in this they have succeeded to a good degree. Private business has had to take a back seat during the last two weeks, if it interfered with press reports. It may be some satisfaction to newspaper proprietors and editors to know that, in the course of events, they who have so often been put back to accommodate what was deemed the more important private or commercial business of the company, have at length been accorded the first place in telegraphic accommodation.

On General Superintendent Stager's division the offices were badly crippled, but still, on the whole, in better condition than anywhere else. Mr. Stager had probably been posted up in regard to the League, and what it would be likely to do in case of difficulty with the company, by a black sheep who obtained entrance into the Chicago circuit; but, as we have not sufficient evidence legally to establish the fact, we will not name him. He had, therefore, for the past two months, been preparing for an emergency, and had quietly secured the promise of the services of a sufficient number of his old operators, if called upon, to prevent an entire suspension of business. Many of the offices at the West were also closed, and the operators who could be persuaded or driven to consent, transferred temporarily to the larger offices. In addition, a pressure was brought to bear on the superintendents of railroad telegraph lines, and they were, in some instances, induced to detail a portion of their force for temporary duty on the W. U. lines. A number of the railroad operators, who refused to be used for

the purpose of crushing out their brethren, were discharged. From all these various sources a sufficient force was gathered in to enable the company to handle the press reports and a portion of the commercial business offering. At the South, from the smaller number of operators employed and available, the strike was more general and effective. For several days last week the lines south of Washington were practically closed. By all sorts of misrepresentations, even extending, as we are informed, to sending forged orders, purporting to come from the Grand Chief Operator of the League, and in the League cipher, which by some means the satellites of the Western Union Company had become possessed of, stating that the difficulty had been amicably arranged, and that all were to go back to work, a number of the Southern operators were induced to return to duty. By these means, and the distribution of what plugs could be picked up, most of the important Southern offices were reopened.

In Washington and Baltimore a few plugs had been picked up, and with the aid of the office managers and two or three of the operators who had not joined the strike, managed to worry through. The situation in Philadelphia has already been described.

In New York all the city offices of the company had been closed, and the managers and such operators as had not joined the strike were raked into the main office, to assist in butchering such business as might still be entrusted to the company. By working such men as they had, night and day, the main office managed to get through the greatly diminished amount of business to be transacted. Many of the small offices East were also closed, and the operators transferred to the Boston and New York offices.

There has been no strike of any importance east of New York, except at Boston. Here the office was supplied with force in the manner described, and with the aid of the manager and chief operator, business was worried through after a fashion. It was expected that the principal offices between New York and Boston would strike on Thursday, but for certain reasons the idea was abandoned.

In the meantime the competing lines were driven with business to their fullest capacity. To them the strike has been a great advantage, and has given them a start which they might not otherwise have obtained in years.

Congress was to meet on Monday, when the press business of the company would be very largely increased, and it was generally conceded that its ability to handle this business would have a material effect upon the result. Operators were ordered hither from Nova Scotia and New Brunswick, and part of the force elsewhere sent to Washington and Baltimore. Five Nova Scotia operators arrived here on Sunday, and were immediately put to work.

To show the condition of affairs at the South, we might state that the Cotton Exchange was unable to make up its returns as usual on Friday, owing to the lack of despatches from the South.

This has not occurred before since the war, and was accepted by the merchants as the best possible denial of the assertion of the company that everything was in good working order in that section.

The following card was published in the Boston papers, Saturday afternoon, by order of the Boston circuit:

TELEGRAPHERS' HEADQUARTERS,
SHERMAN HOUSE, BOSTON, Jan. 7, 1870.

Owing to the conflicting statements in regard to the telegraphers' movement throughout the country, the public may be misinformed as to its nature and causes. We demand no increase of salaries. Our organization was formed for the purpose of maintaining our salaries at the present rate, and to raise the profession to a higher standard. We are not bound in any way to sustain a member who is negligent, incompetent or ungovernable, and are opposed to keeping any such person in the service. We received a despatch from the Chief of our association in San Francisco, dated January 1, and also another, confirming this, that several of our brethren had their salaries reduced, and two their discharges, for being members of our organization, and these men we are endeavoring to sustain. Since that date the wires have been closed against us, and we are unable to make an impartial investigation of the matter, which would satisfy all, but must wait patiently for the arrival of mails.

Any person of intelligence who has read carefully the several letters written by the officers of the Western Union Telegraph Company, cannot fail to have observed the contradictory statements contained therein.

BOSTON CIRCUIT.

This was the condition of things on Monday last. The telegraphers were in almost constant session, at the hall of the League in Grand street, and constantly in receipt of despatches from all directions, and all expressing a continued determination to fight the matter out to the end. The early exuberance and enthusiasm had, however, settled down into a more sober realization of the situation and the work to be done.

The following letter was received on Monday, and its contents communicated to the telegraphers and the public:

SAN FRANCISCO, Jan. 2, 1870.

R. W. FRYE:

MR. DEAR SIR—We have suspended operations for the Western

Union Telegraph Company at San Francisco, Sacramento, Virginia City, Reno, Marysville, Gilroy and Maryfield.

We think we are strong enough to carry our point. A slight reduction made in the salaries of two of the members of circuit 32 (T. P. L.) was met by a petition from all the operators in San Francisco. Mumford, the managing agent, called the first two men whose names were on the petition into his office, and informed them that he was going to make this a test case. They were dismissed, and their salaries taken to increase other salaries up to \$120 per month—an increase in some cases of \$15.

Every man of the T. P. L. was called on to stop, which they did, with one exception.

The Sacramento boys were interviewed by Mr. Gamble, allowed to hear nothing but his statement, and quit to a man; Virginia ditto.

We are in the right. Help us in every way. The men are all sober and honorable.

A man named Sawyer betrayed us, and precipitated action, which was to have been on the 3d.

(Signed), STEPHEN D. FIELD,
Chief Operator, Circuit No. 32.

Accompanying this and subsequent letters were slips from California newspapers, which have espoused the cause of the operators, and defended them against the attacks of the Western Union Company and its subsidized organs on the Pacific coast.

The daily *Morning Chronicle*, of San Francisco, publishes the following card from Mr. Mumford:

SAN FRANCISCO, Jan. 2.

TO ALL OPERATORS: Knowing that many false misrepresentations have been industriously spread abroad, I state, for the information of all operators who think and reason for themselves, and from their own judgments, of what is right or justifiable, that there has been no reduction in salaries in San Francisco or elsewhere, either made or contemplated, and that the present trouble has arisen from the discharge of two men lately employed here, who were doing all in their power to make mischief, and to bring discord and dissatisfaction into an office where heretofore there has been nothing but harmony and good feeling. This movement is so wholly without excuse that my only request is that every reasonable man will, then, give the company his entire co-operation.

GEORGE H. MUMFORD.

Slightly at variance with the statements contained in the above is the following, being a copy of a note addressed to an operator who was receiving \$120 per month, as Mr. Mumford informed our reporter:

JAMES K. PARSONS, December 22, 1869.
DEAR SIR—Your salary from 1st of January will be \$115 per month. Yours, etc.,
JAMES S. URQUHART,
Manager.

The *Chronicle* further states that the operators are not allowed to transmit messages, under any pretext whatever, to the East—one of them being refused permission to communicate with his mother. Yesterday they received two despatches clandestinely from New York, and Mr. Mumford informed our reporter that he had been in communication all day with Chicago and New York, yet a telegram was posted on the bulletin board of the Merchants' Exchange to the effect that a heavy snow storm had shut off telegraphic communication with the East. The strike is wide-spread all over the Union, and no messages are transmitted except by the railroad lines, the repeating points being all closed. In order to get a message through, some of the operators visited Thomas Cash, agent of the New York Herald, and handed him a message in the private cipher of the Operators' Union, which he took to the office and presented for transmission, appended to his own despatch detailing the news to the Herald. Mr. Mumford refused to accept it. The agent then presented him with a despatch, to the same address, stating that "The Western Union Telegraph Company refuse to transmit report of operators' strike on Pacific coast." This was promptly declined, as the worst of the two, and the first one was finally sent.

On Monday last the Southern operators, who, under the misrepresentations and mis-statements of the Western Union officials (and it is said that forged despatches were made use of to effect the purpose) had returned to work again struck on learning the true condition of affairs, and the company is again hard put to it to transact its Southern business.

With this exception, and the gobbling up occasionally by the strikers of some person brought in to fill vacancies caused by the strike, but little of special interest has occurred. The matter seems to have settled down to a test of endurance between the company and its employees.

The following card was issued on Monday, and published in such papers as are not managed exclusively in the interests of the Western Union Company:

TO THE PUBLIC. New York, Jan. 10, 1870.

We announce with pleasure that the most inexcusable and unjustifiable conspiracy ever attempted upon an extensive public business is about to fail in its nefarious purposes. We allude to the action of the Western Union Telegraph Company in reducing the wages of their employees, for the sole purpose of competing with and monopolizing the business of other companies.

Although it is generally known that the telegraphers in the employ of the Western Union Telegraph Company are on a strike, the results which will naturally follow, if the company succeed, are not properly appreciated by the business community. This company have reduced the tolls to certain points we admit, but these reductions are only made to places where there is competition, and, instead of reducing the fat dividends to accomplish their purpose, the scant pittance paid to their overworked operators is fixed to make up all deficiencies caused by this unjust, unequal, and dishonorable warfare upon the public and opposition lines. That the event of the success of the Western Union in destroying all opposition would result in placing the public in the power of this monopoly, to dictate whatever rates they might demand, no one will ever question, and if we in any judge from the past, the new rates would doubtless prove a source of congratulation to the directors upon the increased dividend up in their watered stock.

The issue involved between the officers of the company and the League, for the first forty-eight hours of the strike, was one of veracity between the agent of the company at San Francisco

and the Chief Operator of that circuit. The League based its action upon information received from Mr. Jacobs, who assured them that reductions had been made, and had been going on some time before; and the officers, on the other hand, relied upon statements forwarded by Mr. Mumford, their agent. Since then mail advices from Mr. Jacobs have been received, which leave no doubt of the reductions in San Francisco, and that for some time reductions have been going on along the Pacific slope, and the League is now in a position to prove to the public that the statements of Mr. Jacobs by telegraph were correct.

The question has been asked, "Who is Mr. Jacobs?" and it has been claimed that he is an "unknown and irresponsible correspondent." In contradicting this we wish to state that Mr. Jacobs is personally known to many of the telegraph fraternity, not only in this city but in this country, and he is in every way responsible for the statements he makes. Among the craft he has a high reputation for honor and integrity, and his personal character will compare favorably with any of the officers or directors of the Western Union monopoly. We have thus briefly stated the case to the public, which we felt called upon to do in answer to the circular issued by the Executive Committee of the Western Union Telegraph Company, bearing date January 7, 1870—which, from beginning to end, is a misstatement of the true facts, and an appeal to their late operators to help them out of their present dilemma. As considerable stress is put upon the obligation assumed by members of the League, we desire to say that similar and more binding obligations exist between the officers, members and superintendents.

We have pledged to each other our honor, which we are disposed to respect, not for the purpose of forcing unjust and arbitrary measures against the company, but for the mutual aid, benefit and protection of ourselves and our families, and to resist the encroachments constantly being made upon us, and we ask the sympathy and support of a generous public to aid us in the stand we have taken, feeling assured that the interests of the public demand that this monopoly shall not be permitted to control the entire telegraphic interests of this country.

W. W. BURBANS,
Chairman, } Committee.
C. J. RYAN,
J. M. PETERS,

We regret to be obliged to publish the names of two others of the New York Circuit of the League, who have gone back to the Western Union Company, thus violating their oaths and forfeiting their honor. Messrs. Thurber and Baldwin, of 145 Broadway, are the companions of Lenhart in his treachery. Considering the large number of operators who struck at the call of their San Francisco brethren, the number who have brought upon themselves the contempt of their employers, brethren and associates, is very small.

Tuesday evening Typographical Union, No. 6, of this city, appropriated \$500 to sustain the strike. Other offers of assistance, to a considerable amount, have been made, but thus far but little money has been required.

At the time we close this report the feeling is apparently still one of determination to carry out the movement, believing that right and justice is on the side of the operators, and that patience, perseverance and determination, must eventually succeed.

PERSONALS.

MR. JULES GUTHRIDGE, who was one of the San Francisco, Cal., operators of the A. & P. States Telegraph Company, at the time of the consolidation, before the strike, has resumed his old place in the Sacramento office of the Western Union Company.

Wanted,

the address of Sarge Peabody, formerly Secretary of Supt. Williams, of Western Union Telegraph, at Cincinnati, O.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Railroad Telegraphers Loyal.

DETROIT, MICH., Dec. 27th.

TO THE EDITOR OF THE TELEGRAPHER.

In common with thousands of telegraphers I read the communication in the last number of our paper on "The War Cloud in the Horizon," and to it I heartily say Amen! It meets not only my approval but that of the profession generally, so far as I have the means of learning their views.

In conversation with some of the city operators here a fear was expressed that they would be compelled to accept the terms that would be proposed by the would-be monopolizers, who, in case of their refusal to accept a reduction from their present inadequate compensation, would fill their places with recruits from among the numerous good, but even worse paid, railway telegraph operators.

In this our brethren on commercial lines are mistaken. I am myself a railroad operator, and have recently conversed with other operators on the line upon which I am employed, on this subject, and find them unanimous in their agreement that the interests of the

commercial operators are ours, and we will to a man stand by them in their resistance of any war tax.

It should in fairness be stated that upon this line we are not worse paid than city operators generally, and have no reason to complain, but on the contrary, much to honor and respect our generous Superintendent for. Another reason why the railroad operators will not be found available as a base of supplies, in case of difficulties between the companies and their employes, may be found in the respective hours of labor required. We work but eight hours daily, while in the city offices, not unfrequently, twelve to fifteen hours service is required. But were these things otherwise, and a transfer to a commercial line an improvement and promotion, we would reject with scorn the overtures of such corporations to fill the wooden-seated stools of hard worked, ill treated and poorly compensated operators.

In conclusion, I would say to our brethren in this matter, be firm and confident, assert and maintain your rights without fear, and your victory is assured. MAC.

THE TELEGRAPH.

(By Atlantic Cable.)

The Telegraph Companies.

LONDON, Jan. 11.—The negotiations for a consolidation of interest between the Anglo-American and the French Cable Companies are progressing favorably.

It has already been settled that the two companies will work harmoniously together, capitalize their aggregate receipts, and divide profits upon an agreed basis, even though the negotiations for still closer arrangements should fail.

LONDON, Jan. 11, Evening.—Telegraph cable stock is heavy. The holders of Anglo-American stock object to amalgamation with the French company.

LONDON, Jan. 12.—It is the original Atlantic Cable Company (certain of whose influential members are adverse to the consolidation or composition with the French Cable Company) whose hostility has caused a depression in cable shares.

Annual Election of the A. and P. Telegraph Co.

THE annual election for trustees of the Atlantic and Pacific Telegraph Company was held on Tuesday last, at their offices, 31 and 33 Broadway, and resulted in the choice of the following ticket:

A. F. Willmarth, W. D. Snow, Henry A. Smythe, H. F. Spaulding, John H. Mortimer, William H. Guion, R. R. Graves, Elisha Brooks, John S. Lytle, Alfred Nelson, Samuel U. F. Odell, Henry M. Taber, Edward Burckhardt and H. D. Walbridge, New York; Abijah W. Chapin, Springfield, Mass.; Allen Munroe, Syracuse, N. Y.; J. N. Kinney, Cincinnati; James N. Matthews, Buffalo; George Griswold Gray, New York; Horace S. Walbridge, Toledo; T. J. S. Flint, Chicago; S. H. Marks, Lockport; H. M. Flagler, Cleveland; William Blair, Chicago; Angus Smith, Milwaukee; Oliver Ames, Boston; James Brooks and John G. Vose, New York; John Allen, Jr., Buffalo; S. D. McMillan, Cleveland; E. H. Van Kleeck, New York; Cheney Ames, Oswego; Richard Mortimer, A. R. Van Nest, Sidney Dillon, C. H. McCormack and C. A. Lombard, New York; C. G. Hammond, Omaha; Rowland G. Hazzard, Providence; John Duff, Boston.

It will be seen that among the above gentlemen are Messrs. Ames and Duff, President and Vice-President of the Union Pacific Railroad, besides several directors of the same corporation, and their presence would seem to promise that no time will be lost in securing connections with the Pacific coast.

Telegraphs in Great Britain.

THE telegraph business in Great Britain has, comparatively, made rather smaller progress since its start than in other European countries. The facilities enjoyed in England, for instance, are rather inferior to those in France or Belgium. The four great principal companies in the United Kingdom, which, for a long time past, have furnished the Britishers with but limited opportunities for "using the lightning," possess a capital of about \$11,797,270. This amount is divided among the respective companies thus: Electric and International Telegraph Company, \$5,807,125; British and Irish Magnetic, \$3,944,398; United Kingdom, 1,732,235; London District, \$313,512. In 1867 the first of these companies possessed 9,740 miles of lines, and 47,572 miles of wires; the second 18,732 miles of wires; the third 9,702 miles; and the fourth 495 only. The total network of wires, including those of the various railroad corporations, was probably about 80,000 miles. The expenditure on these lines was about \$137 per mile of line, and \$154 per mile of wire. The relative expenditure of the various com-

panies was as follows: Electric and International, \$596 per mile of line, and \$122 of wire; British and Irish Magnetic, \$391 per mile of line and \$210 of wire; United Kingdom \$1,082 per mile for the first, and \$178 for the second; London District, \$2,090 for the former and \$633 for the latter. By comparing this combined or separate outlay, per mile of line or of wire, with that of France, it will at once be seen how lavish the expenditure has been in Great Britain. France, at the close of 1867, had 23,090 miles of lines, and 70,330 miles of wire, and 335 miles of submarine cable. The average cost per mile of line was only about \$216, and per mile of wire only \$65. The English line builders certainly ought to be able to give some good reason for the astonishing difference. One reason alleged is that heavy legal expenses are necessary in the United Kingdom for the establishment of public companies. Much capital is required for what is called promotion money, and Parliament swallows, also, its modicum of cash. In England, out of 2,065 Post-office towns and villages only 648 possess proper telegraphic facilities, and only 67 towns in Scotland have any facilities of account. In Ireland, out of 503 postal stations only 109 are provided with telegraph offices.

The West India Telegraphs.

THE United States war sloop Yantic, which has been fitting up at the Brooklyn Navy Yard for the purpose of making soundings for the West India submarine cables, will soon leave for that purpose. It will make the soundings from Jamaica to Porto Rico, St. Thomas and Barbadoes. The British Admiralty have also ordered a vessel to continue the soundings from Barbadoes to Trinidad and Demarara. The Yantic is under the command of Capt. Irwin, of the Navy, by whom the soundings between Jamaica and Panama have already been made in the Gettysburg.

The cables of the West India and Panama Telegraph Company, to connect Cuba, Jamaica and Porto Rico, have been completed at the Silvertown Works, and the whole of the line will be shipped by March 15. An additional subsidy of £800 per annum has been devoted by Antigua to establish a station in that Island.

TELEGRAPHIC BREVITIES.

THE original model filed by Professor Morse, when he got his telegraph patent, has been unearthed from a lot of old rubbish in the cellar of the Patent Office, and was an object of considerable interest to numerous parties on Saturday. The clumsiness of the signal key, as compared with the one of to-day, is ridiculous; it is nearly two feet long, and has a large lump of lead at the end furthest from the hand, to throw the key up and break the circuit.

A telegraph company has been organized in St. Johnsbury, with Franklin Fairbanks as president. As soon as a capital stock of \$20,000 is raised work will be begun on the line, which extends from Swanton to the Connecticut river.

A Havana despatch says the recent reduction in the Cuban cable tariff gives general satisfaction. A further reduction is contemplated when the West Indian cable is finished.

The privilege has just been granted to an American company, by the Portuguese Government, to land and operate a cable on the Azores; to be laid from New York to the Azores, thence to England, near Brighton, and thence by two lateral lines to France, near Havre, and Holland, near The Hague. This company promises cheaper rates than those of existing lines. The cable will probably be laid during the present year.

There are now 114 wires going out of the building occupied by the Fire Commissioners in this city, radiating to all points of the compass, the street boxes being connected with some one or other of these 114 lines.

The expedition to survey a route for the Darien Ship Canal will take out material to erect a line of telegraph across the Isthmus, to aid the surveying party while engaged in their work, and enable them at all times to communicate with the coast. Two expert telegraph operators will go with the expedition.

A Rascally Telegraph Operator.

A RECENT despatch to the daily *Evening Mail*, of this city, from Cincinnati, Ohio, states that some time since a young man called at the bank of Gilmore, Dunlap & Co., and presented a check for \$830, drawn by John J. Roe & Co., St. Louis, on a St. Louis bank, and endorsed by A. H. Lewes, of the Ohio and Mississippi Railroad. The check was discounted and forwarded for collection, but came back with the unpleasant announcement that it was a forgery. Detectives were placed upon the trail, and yesterday arrested H. E. Lucas, a telegraph operator.

He was recognized by W. H. Keeler, news agent on the O. and M. R. R., and was taken to the Third street station house, where he acknowledged his guilt, but seemed quite indifferent about the affair; in fact, he seemed to take a sort of pride in the exploit when arrested. On being searched a number of blank checks on all the prominent banks in this city were found in his pocket. He boasted that he has property in St. Louis, and says his bonds will not be over \$5,000, and that he can afford to give that and slip away.

Mr. Lucas has a fine reputation, and formerly occupied a responsible position as an operator in the Western Union Telegraph office in this city. From this city he went to St. Louis, and about six months since he was married to a beautiful young lady. In October last he returned with his wife to this city, and they have resided here since that time.

After his arrest the officers visited his house, and upon announcing his guilt to his wife she seemed quite overcome by the news of his arrest, but without demurring she surrendered the amount of the check.

The Lightning Manipulators Feasted.

HANDSOME PRESENTS TO A DESERVING GENTLEMAN.

FOR nine or ten years the Adams Express Company has given an annual oyster supper to the operators and other employes of the telegraph companies in this city. These suppers, which are looked forward to with unusual pleasure by the recipients, serve to foster friendly relations between the employes of the two great corporations, and bring a large number of telegraphers (who otherwise would not meet very often) together, under the most harmonious circumstances. Mr. L. C. Weir, the genial and gentlemanly agent of the Express Company, on these occasions has always resumed the responsibility of host, for which his long service as an operator in the Western Union Telegraph Company, in this city and elsewhere, eminently qualifies him, by affording him an idea of telegraphic peculiarities.

The annual supper for 1869 was given at the St. Charles restaurant, Saturday evening, and nearly a hundred "knights of the key" (as operators term themselves) assembled at the festive board, prepared to "do or die" in the gastronomic cause. The tables presented a triumph in the culinary art, and the banqueters did ample justice to the occasion. After disposing of the more substantial portion of the feast, the "spiritual" accompaniments were introduced, and wit and sentiment flowed in unison therewith.

A new man, at one end of the table, evinced commendable industry in providing for his friends, that got into the bush, by encouraging the waiters, who, with arm strong but weary perseverance, endured the hall upon their web of the good rich beverage, and got too far along to see more of the tail or head of the entertainment, or to take a warner from the shepherd, but the suggestion of a *whalin'* brought the bird out of the tree, and the *smiths* kept the *barns* in proper condition for storing the *debris*.

During the evening Major J. C. Hall arose, and, after expressing, on behalf of the employes of the Western Union Company, heartfelt thanks for this and past kindnesses, and high appreciation of Mr. Weir's business and social qualities, presented a testimonial of regard, in the shape of a splendid gold-headed cane and gold lined silver tobacco box, inscribed, the former, "L. C. Weir, 'ax.' from 'C.' office," and the latter, "L. C. Weir, 'ax.' 'C.' " "Ax" is the telegraphic name for Adams' Express, and "C" for the central office of the Western Union Telegraph Company, Cincinnati. Mr. Weir was entirely ignorant of the proposed gifts until they were thrust at him, and appeared worse scared than if he had been shot at, but succeeded in returning thanks for the kindly remembrance. Toasts were drunk to the officers of the Express and Telegraph Companies, and other gentlemen, and after enjoying themselves until near midnight the party dispersed, and returned to their homes, all highly delighted with the entertainment.—*Cin. Daily Chronicle*, Dec. 27.

New Patents.

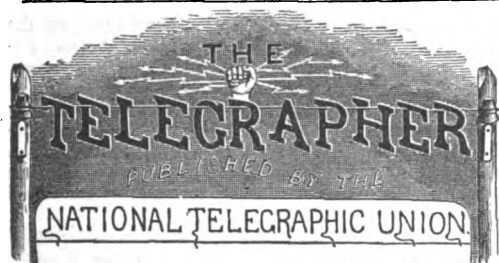
For the week ending Jan. 4, and bearing that date.

No. 98,593.—ELECTRIC CLOCK. Vitalis Himmer, New York, assignor to himself, W. Heissenbuttle and James McMullen, Brooklyn, N. Y.

I claim the oscillating armature lever C, acted upon by the electro-magnets A B in one direction, and by a weight, or its equivalent, in the other direction, and connected with the arm E, and with the anchor M, to move the hands and reverse the motion of the balance wheel, substantially as herein shown and described.

No. 98,594.—ELECTRIC CLOCK. Vitalis Himmer, New York, assignor to the same parties.

I claim the combination, with the magnet, of the oscillating armature lever D, and weights E d, as and for the purpose specified.



SATURDAY, JANUARY 15, 1870.

J. N. ASHLEY.....Publisher and Editor.

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THE TELEGRAPHERS' STRIKE.

As the bitter contest between the Western Union Telegraph Company and a large number of its employes is of absorbing and almost exclusive interest to the telegraphic fraternity in this country, a large portion of this paper is again devoted to it. We have endeavored, in another part of the paper, to give a true and connected statement of the facts in regard to this exciting movement and its progress. Of course the limited space at our command obliges us to omit much that would be of interest, but which is not essential to the proper understanding and appreciation of this national affair. We indicated last week our full sympathy with and support of this effort of the operators, not to extort new concessions from their employers but to maintain the previously existing rates of compensation, and prevent the demoralization and destruction of the protective organization which, at the expense of much labor and expense, has been established over most of the territory covered by the telegraph lines. Originally commencing in California, for the correction of local grievances, it has assumed national dimensions and national telegraphic importance. It has become now not merely a struggle for the correction of local grievances, but a bitter and determined attack upon, and defence of the existence of the Telegraphers' Protective League.

On the part of the telegraphic fraternity the movement has been conducted with calmness, moderation and determination. No attempt at falsification has been knowingly resorted to, and no interference with the rights or property of the Western Union Company has taken place, or even been spoken of. On the other hand, the managers of the Western Union Company, controlling the only avenue of telegraphic communication with the Pacific coast, and having full use of press facilities, from which the telegraphers are excluded, has resorted to false statements, and piteous appeals to its late employes to come back, forswear the League, and be good boys and girls hereafter. It has been somewhat difficult for the committees of the League to keep pace with the company in the publication of cards and statements, but we believe they have succeeded in refuting all such thus far issued. We have published all of these statements on both sides, and shall continue to do so until the end is reached.

Of the policy or impolicy of the movement it is now too late to argue. It has been made, and in it is involved the existence of the League itself, and the possibility, for years to come, of any organization of the telegraphic fraternity for mutual benefit and support, in the assertion and maintenance of their rights against the aggressive action of the telegraphic companies and officials. In such a cause there should be no such word as fail. The contest may be protracted, but if the telegraphers "stick," as they comprise at least ninety per cent. of the first class operators, it seems to us it must result in a settlement more favorable than can be secured by individual action.

A few of those who, in the first instance, came out from their offices and joined the fortunes of the strikers, have fallen by the wayside and ignominiously begged forgiveness, and been received back to the tender mercies of the corporation against which they had dared to revolt.

They are now received with favor, and abundant promises for the future. After the crisis is over they will ascertain what these are really worth. At present they are welcomed, for the company is hard put to it for operators, and their example is relied upon to seduce others from their allegiance. In the future their prospects will be poor indeed, for those whom they now serve at the expense of their honor cannot but despise them for their treachery to their associates, whom they had solemnly sworn to support. Hereafter their word can be regarded as of little value, when their oaths and pledges of honor have proved of so little binding force. Deaf alike to the promptings of conscience or honor, they will be hereafter regarded with aversion and contempt, not only by those whom they have treacherously sought to subserve, but by their professional associates. If failure was inevitable they should have remained steadfast until properly released from their obligations. We make these remarks more in sorrow than in anger, deeply regretting that the columns of THE TELEGRAPHER should be necessitated to record such disgraceful facts about the members of an honorable profession.

There were some, not members of the League, who struck with the League. If any such have returned to their telegraphic duties, while we cannot but regret the act, we wish them to understand that our remarks are intended to apply *only* to the sworn members of the League. The former, of course, were bound to adhere to the movement only so long as they should see fit.

The whole affair was, as advices from California inform us, precipitated by the treachery of a black hearted scoundrel, by the name of SAWYER, of the San Francisco office, who entered the League, doubtless, for the purpose of betraying it. He should be a marked man to every telegrapher henceforth, and socially ostracized by every honorable individual. It is, perhaps, too much to expect that such a conscienceless villain should suffer mental castigation for his crimes, but no honorable man would, for the whole value of the Western Union property, carry with him for life the stigma of such heartless perjury and rascality.

We desire to say a word for the lady operators who have participated in this movement. With one exception, elsewhere mentioned, they have remained firm and steadfast. They deserve all honor and respect, and their brethren of the League are bound to see that they are provided for in any event. It is understood that certain Western Union officials threaten them with special prescription. This must not be submitted to or permitted. Every sentiment of honor and manliness forbid that any settlement should be made which shall not at least place them in as favorable positions as before.

The Western Union Company is obliged to resort to all manner of devices to transact even the diminished business confided to it. Its minor offices are closed—other offices, where there were two or three operators, are left with but one; operators are imported from the Canadian Provinces, and by such means their through wires are partially manned. Every day that the strike continues is to it not only a serious pecuniary loss, but even more damaging in the destruction of its *prestige* and the transfer of its business to its rivals. The loss already entailed upon its stockholders amounts to hundreds of thousands of dollars. How long they will submit to a continuance of this state of things, when a little conciliation on the part of its managers would settle the whole difficulty in half an hour, and establish more cordial relations with its employes than before, remains to be seen.

ONE reason for the enormous capital invested in submarine telegraph cables is probably to insure them against breaking.

Presentation to Superintendent E. O. Wait.

THIS festive season is made the occasion of many kind remembrances and grateful recognitions of official worth, both on the part of employers and employes. The telegraphic fraternity are by no means backward in these kindly and appreciative courtesies, as our columns have often testified. It gives us pleasure to record the action of the telegraphic employes of the Western Union Railroad. On Christmas morning Mr. E. O. WAIT, the Superintendent of the Railroad Telegraph, was surprised by a visit from an unusual number of the telegraphic and other employes of the road to his office at Racine, Wis. The sudden and numerous visitation was explained by Mr. R. W. EVANS, who addressed Mr. WAIT as follows:

Mr. WAIT—Your friends having you in mind, wish to express their appreciation of your excellent management of the Western Union Railroad Telegraph Department. We, the operators, and your associates in the employ of the Western Union Railroad, take this opportunity to give you a Christmas gift—this beautiful silver watch; we give it to you not for its intrinsic value but for its imperishable nature, that it may be engraven on the tablets of your memory as a token of our friendship and esteem.

At the conclusion of his remarks Mr. EVANS presented Mr. WAIT with a splendid American watch.

Mr. WAIT was much surprised at this manifestation of the esteem and regard of his associates, and, in a note addressed to them subsequently, suitably and feelingly acknowledged the compliment. In conclusion, he says:

Believe me, I shall treasure this free will offering, this beautiful gift, and while it performs its part amid the things of earth, with every throb of its busy life will come the echo of many names that ne'er will be forgotten.

I shall continue, with renewed efforts in the discharge of every duty, cheered by the memory of your favor and the kind words accompanying it. Indeed I thank you for this testimonial, with the assurance that I shall ever strive to merit your approval; and I am sure, if we strive to "act well our part," there will never be any necessity for "watching" one another, except on "tick."

Wishing you all a happy New Year,
I am, dear friends,
Gratefully and truly yours,
E. O. WAIT.

George W. Shawk & Co.

THE card of Messrs. GEO. W. SHAWK & Co., of Cleveland, Ohio, which appears in the present number of THE TELEGRAPHER, is worthy the attention of those who may have occasion to purchase telegraph instruments or supplies. Mr. SHAWK was employed in the shops of the Western Union Company at Cleveland for over twelve years, the last four of which he was the foreman, and is endorsed by Gen. Supt. STAGER as a most skillful and experienced workman. We bespeak for him a liberal patronage.

Who Struck First.

A CINCINNATI correspondent informs us that we were in error in the statement last week that the operators in that city were the first East to strike, in response to the call of the Pacific coast. Chicago office struck at 9.30, and Cincinnati at 10.30 A. M. of the 3d inst.

Telegraphers' Ball.

THE annual ball of the New York Telegraphers will take place at Apollo Hall, Tuesday evening, January 18.

To our Correspondents.

THE pressure upon our columns, arising from the strike, must be our apology to correspondents for apparent neglect of their favors. We hope soon the successful termination of the movement will admit of our devoting attention to other matters of interest.

THE Atlantic and Pacific Telegraph Company have opened an office at 1278 Broadway, corner of Thirty-third street.

The Philadelphia Backsliders.

THE following is the list of Philadelphia operators who have stultified themselves by signing a card renouncing their connection with the League, and endorsing the statements of the Western Union officials, and the plugs who kept their places warm for them until they were ready to re-occupy them. Let every honorable telegrapher remember them in the future:

ISAAC H. D. MAZE, HENRY H. JOHNSON, FOSTER WELING DAVIS, THOS. J. CLINGER, JOSEPH BRADLEY, F. MARION SMITH, HENRY SCHOTTE, JESUP CORDWELL, SAMUEL BRACKEN, JOSEPH SIMPSON, CHARLES LAWSON, WM. BUCKWELL, of the main office, and JOSEPH REA, and WM. HARGRAVES, of the city line.

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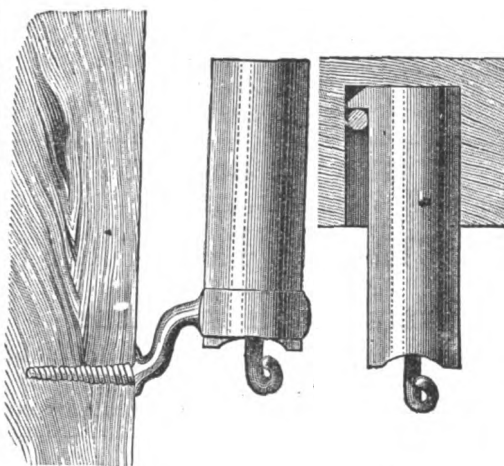
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at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same.

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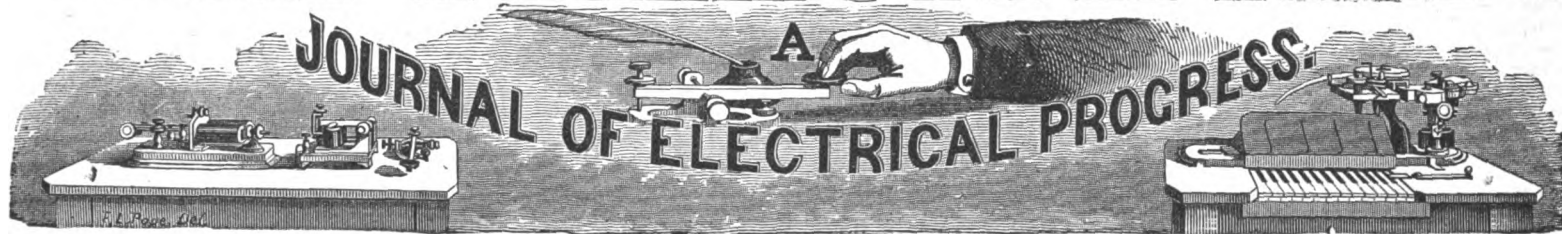
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THE TELEGRAPHER.



Vol. VI.—No. 22.

New York, Saturday, January 22, 1870.

Whole No. 184.

THE STRIKE ON THE WESTERN UNION LINES.

THE history of the attempt of the employes of the Western Union Telegraph Company to sustain their brethren in California against the tyrannical and oppressive actions of Mr. Mumford, who represents the Company on the Pacific coast, was in last week's paper brought down to Thursday noon. At that time a few of the employes had proved weak and returned to work, satisfied that the effort must prove a failure. The persistent declarations of Mumford and the Western Union officials here that there was really no cause for the movement, had also demoralized to some extent many who had come out and participated in the strike at the call of the officers of the League.

In order to effectually dispose of the latter statement we publish the following letter from the Chief Operator of the San Francisco Circuit of the League, giving a full and true statement of the facts, and the grounds upon which the action of the coast operators was founded:

SAN FRANCISCO, CAL., Jan. 3.

R. W. Pope, G. C. O.:

DEAR SIR—On or about the 22d of December, 1869, four operators, J. K. Parsons, E. H. Reese, John Curran, each receiving one hundred and twenty dollars, and Jasper N. Keller, relieving a man who had formerly received one hundred, received written notices that their salaries would be reduced from the first of December. One of the operators, Reese, called on Mr. Gamble, General Superintendent, and complained of the injustice of reducing salaries for the current month, of which they had already worked twenty-two days, with the expectation of receiving their regular salaries. Soon after notices were received that the reduction would not take place until the first of January. On or about the 28th of December a petition was presented to Mr. Mumford, managing agent, signed by every operator in San Francisco office but one (who had given his word and honor), who refused, asking that the salaries of operators reduced be replaced at the old figure. On Friday, Dec. 31st, in conversation with three of the operators, E. H. Reese, John Curran and L. N. Jacobs, Mr. Mumford said he proposed to equalize the salaries in some way, by which the salary account should not exceed in amount that of any previous month, the force having been increased one man within three months, and having received three additional lines in the office. The proposition was that those whose salaries had not been touched be reduced to a level with those already reduced. On one of the operators (L. N. Jacobs) stating that he could not consistently submit to a reduction, he was immediately notified to quit, and a few minutes afterwards another operator, E. H. Reese, was discharged, and those remaining notified that on and after January 1st their salaries would be uniform, one hundred and twenty dollars per month—thus raising each man reduced to the former figure, and also increasing the pay of others whose salaries previously were less. Nothing was done further in San Francisco until evening.

At Sacramento, during the evening, Mr. James Gamble, General Superintendent, called the operators together and discussed matters with them, misrepresenting facts as much as possible. He then demanded an immediate answer as to whether it was the intention of the operators in Sacramento to stand by the action of the San Francisco operators, or would pledge their word and honor to remain with the company. The operators desired one day's time, in order to learn facts from San Francisco. This was denied them. They then asked for permission to converse with San Francisco over the wire. Mr. Gamble consented, on condition that he be a listener. To this the operators objected. He then gave them fifteen minutes time to answer definitely. They withdrew for private consultation, and in less than five minutes returned and reported to Mr. Gamble, "We have resolved to stand by the San Francisco operators to a man." On learning this Gamble notified them that they would not be required after ten o'clock that evening.

This news was immediately sent to San Francisco, and the Chief Operator in that city overhearing one of the operators receiving it, immediately informed Mr. Mumford, who sent for him, and after several ineffectual attempts to "pump" him, asked him if he should continue to work for his present salary?

OPERATOR—"What is my present salary?"

MUMFORD—"\$115 per month."

OPERATOR—"You told me this morning I was to receive \$120. Why this change?"

MUMFORD—"I have concluded to reduce it again."

OPERATOR—"What do other operators get?"

MUMFORD—"None of your business."

OPERATOR—"It is my business, and I don't propose to work less than other operators."

MUMFORD—"Then you can quit. Consider yourself discharged."

The operators in San Francisco immediately assembled, and concluded none should go to work in San Francisco office, and the strike commenced in earnest.

The above is undoubtedly a fair and true statement of

the origin of the difficulty, and we print it now as a part of the history of the affair. Can any unprejudiced person say that there was no good ground for the action of the Pacific coast employes of the Western Union Company?

We also publish the amnesty proclamation of Mr. O. H. Palmer, printed a week ago last Saturday. We intended to have published this in its regular order last week, but it was accidentally omitted:

EXECUTIVE OFFICE,
WESTERN UNION TELEGRAPH COMPANY,
145 BROADWAY, NEW YORK.

NEW YORK, Jan. 7, 1870.

TO ALL OFFICERS AND OPERATORS OF THE WESTERN UNION TELEGRAPH COMPANY:

We are happy to announce that the most inexcusable and unjustifiable conspiracy ever attempted upon an extensive public business has failed in its nefarious purpose; that the crisis has passed, and our business is rapidly resuming its accustomed course. We sincerely regret to learn that some of our trusted employes have assumed secret obligations, under which they have considered themselves bound to violate their open business obligations with us, and to aid in the prosecution of measures aimed at the welfare and prosperity of this company, with whom they have so long maintained relations of mutual respect, good will and confidence. That such men should have taken upon themselves obligations of such immorality and bad faith is only to be explained by the supposition, which we are glad in charity to admit, that their full effect and purposes were not appreciated. The performance of these obligations being entirely at war with the due regulation and control which the company should have over its employes, would render the carrying on of telegraph business impossible.

It is now well known that the alleged pretence of a contemplated reduction of wages was entirely unfounded, and that but one man has left the employment of the company upon a question of compensation—and this person was not dismissed, but refused to work because his salary was increased only \$10 a month when he demanded \$20; that the other salaries in the San Francisco office were adjusted upon a new scale, in part suggested by the operators, by which some were increased but none reduced; that the force in the San Francisco office being too large for the requirements of the business, two men were relieved, and among them one Jacobs, whose misrepresentations appear to have furnished the occasion for the hasty, inconsiderate, and unjustifiable action of so large a body of men. It appears this Jacobs was a prominent officer in what is called the Telegraphers' League—a society the existence of which was not known to the company, or to Mr. Mumford, our agent on the Pacific coast.

The officers of the company desire to express their hearty gratitude to those of our employes who have remained loyal to duty, and to assure them that the Western Union Telegraph Company will not forget their manly and honorable conduct. As to those who have been misled, we desire to submit the question whether they regard themselves as irrevocably bound and enslaved by their secret oaths and obligations? It seems to me impossible, if they will pause and reflect, that they will thus voluntarily abandon their personal independence and sink their individual manhood. Among other obligations irreconcilable with good faith and self-respect, it is provided by the constitution of the "League" that "the League expects every member to perform his whole duty towards his employers, in accordance with the terms under which he was engaged, provided he does not thereby conflict with a duly authorized order from the Chief (League) Operator of the Circuit to which he belongs;" and further, that "no member shall be at liberty to leave his regular duties, to operate in any other town or city, under orders from any telegraph company, without having first received permission from the Chief Operator of such League." It is also further provided, by the initiatory oath, that the member "will make common cause with the members of this League; that forsaking your allegiance to corporations or individuals, you will, if necessity requires it, place your time and services at the disposal of the officers of the Telegraphers' Protective League." Now, have you considered that such an organization may be managed, and through it you be controlled to serve an interest hostile to your employer, and for the basest purposes, without benefit to yourself? Do you think that any telegraph company could with safety submit its interests to the hands of men thus bound to act, subject to and at the bidding of a secret, irresponsible and perhaps hostile control? There are men of this class whose personal honor and integrity would be sufficient security for any undertaking; but if such men agree in advance to substitute for their own judgment and consciences the arbitrary commands of others, they lose that just claim to confidence to which their characters would otherwise entitle them. Do you consider yourself, I again ask, as having irrevocably bound yourselves to these unmanly and degrading obligations, which are, by the common sense of mankind, pronounced without any binding force in honor or conscience? They tend only to impair your usefulness to yourselves and to your employers, and ought to be promptly renounced.

Such of you as think rightly upon these questions, and desire to return to the employment you have left, will be received with the same feeling which always hitherto has been entertained for

you, and be protected in the quiet and peaceable performance of your duties.

O. H. PALMER, Treasurer.

The latter part of last week it became evident that many who had previously been firm in support of the movement were giving way and returning to duty, making such arrangements as they could with the company. The Boston Circuit of the League was dissolved; the reasons for which are given in a communication which is published elsewhere. Albany and Troy operators had either resumed work or were seeking opportunities to do so. The battle had evidently gone against the strikers, and the company, although at great loss, had triumphed.

There were many however who could not realize that the battle was lost, and still held out in hopes that some favorable turn in the tide might occur which should enable them to recover their vantage ground. One reason which induced many to hold out was the threatened proscription of the lady operators who had joined in the movement. While expressing a willingness to receive the men who had gone out, it was asserted by the Western Union officials that the ingratitude manifested by the women had been so great that forgiveness and restoration to employment was not to be thought of. In this connection we republish a card, which was generally published in the city papers on Sunday last:

NEW YORK, Jan'y 16, 1870.

TO THE PUBLIC—

The statement has been made, apparently by authority, that the ladies who have participated in the recent movement, on the part of the operators of the Western Union Telegraph Company, would never, under any circumstances, be again employed by that company. The reason alleged for this special vindictiveness is that these ladies were under peculiar obligations to the company for instructions in the telegraphic art, and that their attempting to assist their brother operators in a strike was an act of ingratitude and injustice towards their employers.

In justice to ourselves we desire to state that, among the ladies who have recently left the employ of the Western Union Company in this city, there are five who were taught in a school of telegraphy conducted by the American Company (not by the Western Union), and who have worked over five years at a little more than half the salary paid to men and boys for precisely similar service. The remaining ladies paid for their tuition themselves, in colleges and elsewhere, in different parts of the country. Not one of us, as far as we are aware, has received her telegraphic education at the expense of the Western Union Company.

In addition to our insufficient compensation we have been obliged to submit to unnecessary restrictions, indignities and insults, during business hours, and to the capricious and unreasonable exactions of the managers, who is practically autocratic in her government, through her influence with the officials of the Company. A simple statement of facts in regard to our treatment would, we are confident, satisfy any reasonable person that, aside from our sympathy with any movement of our brother operators, we ourselves have sufficient cause to rebel, if rebellion it may be termed. The data for such a statement is abundant and in our possession, and if it is proposed by the Western Union Company to specially persecute us for the part we have taken in what we believed to be a just movement, we shall be compelled, in self-defence, and in our own justification, to acquaint the public with the real condition of affairs during the last two or three years in the ladies' department of the Western Union Telegraph Office, at 145 Broadway.

THE LADY MEMBERS OF THE TELEGRAPHERS' PROTECTIVE LEAGUE.

Unless we have been misinformed by operators who have been employed in the lady's department of the Western Union office in this city, there has been abundant cause for a strike there for a long time past. The regulations established and maintained are such as men would never submit to, and the absurd capriciousness, and arbitrary and tyrannical disposition of the person in charge, has been such as to render a position there only endurable as a relief from dependence and starvation on the part of those whose misfortunes delivered them over to her tender mercies.

As we have said, it was on account of this threatened proscription of the ladies that many held out, even after all hope of ultimate success had been abandoned.

The strike, as a general and organized movement, may be considered as ended. Most of the operators have returned, or will return to the employ of the Western

Union Company. The latter needs their services, and the former require the situations to enable them to live. The result of the movement has been disastrous in many respects, yet it may eventually result in good.

Some of the operators have found employment in other lines of business, and will not now, if ever, return to telegraphing. Their withdrawal from the business is a serious loss, but they cannot be blamed for seeking elsewhere the independence which it seems impossible to secure in the profession to which they have hitherto devoted their time and talents.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., Jan. 20th.

TO THE EDITOR OF THE TELEGRAPHER.

As very little was done by Congress last week affecting the telegraph, and as the great strike of the Western Union employees would necessarily occupy your columns almost exclusively, I postponed the renewal of my correspondence until this week.

It was expected that Mr. Washburne would avail himself of the then existing general disturbance of telegraphic relations between the Western Union Company and its operators to press his pet postal telegraph project, but he has not done so. Probably this was on account of the preoccupation of Congress with the Virginia reconstruction matter, which rendered the consideration of a subject which would inevitably give rise to much debate impracticable. The able and powerful speech, on Tuesday last, of Representative Dawes, of Massachusetts, the Chairman of the Committee on Appropriations, on the urgent necessity for economy in the expenditures of the Government, and a large reduction of the estimates of the departments for the next fiscal year, has probably put a quietus on all such projects, which involve large additional appropriations and expenditures, at least during the continuance of the present Congress. The people's impatience under the present onerous taxation has made itself felt in Congress, and economy, and the postponement of all projects involving increased expenditure, is the order of the day. Against this the advocates of the postal telegraph will find it vain to struggle.

On the 10th inst. Senator Stewart, by unanimous consent, introduced in the Senate a bill abolishing the franking privilege, and authorizing the Postmaster General, after advertising, as in other cases, to contract with the lowest responsible bidders for the construction of telegraph lines over the principal mail routes of the United States, and to establish a postal telegraph system in connection with the Post-office Department; and that he shall regulate the charges upon telegraphing so that the revenues of the system shall, as nearly as possible, equal the current expenses for operating the same; the construction account shall in no year exceed the charge upon the department of the franking privilege for the fiscal year ending June thirty, eighteen hundred and sixty-nine.

This bill was referred to the Committee on Post-offices and Post-roads, and ordered printed.

On Monday last Senator Coupling offered a resolution, which was agreed to, directing the Committee on Foreign Affairs to inquire whether Henry Mahler, a citizen of Prussia, has any claims against the proprietors or managers of the French cable, so-called, which should be regarded or protected by the Congress of the United States. He explained that his object was to secure the introduction of a memorial from the person referred to, who being a subject of a foreign government, it could not, under the usage of the Senate, be received without special provision.

On the same day Mr. Sumner, from the Senate Committee on Foreign Relations, reported a substitute for the bill relating to telegraphic communication between the United States and foreign countries, of which the following is a synopsis:

The substitute provides that all such communications by means of lines or cables, partly within the jurisdiction of the United States, shall be subject to the following conditions:

First—The Government of the United States to enjoy the same or similar privileges, regarding use and control of said lines, as afforded, by any foreign government.

Second—The United States to be entitled to use the lines one hour in every twelve for transmission of government messages by its own operator. Such messages from this country to take precedence over all others.

Third—The general regulations and rates for transmission of such messages to be established by the Postmaster General, if not otherwise fixed by agreement.

Fourth—The lines shall be kept open to the public for transmission of commercial intelligence for daily publication, and all messages to be forwarded in the order of reception, except as above provided.

Fifth—It shall not be lawful for two or more companies to consolidate or unite their interests without the consent of the Postmaster General of the United States, and upon such terms as he may determine. If any two or more such companies have combined, or shall combine to fix the rates of compensation for messages, it shall be the duty of the Postmaster General, in the absence of an international convention regulating the matter, to determine such rates, and to establish such rules and regulations with regard to them as he may judge necessary; and the exercise of these powers shall be subject to the control of Congress, and be applicable to existing cables, as well as those hereafter established.

Sixth—A written acceptance of the foregoing conditions must be filed with the Secretary of State before extending any such line within the jurisdiction of the United States.

The second section gives the consent of Congress to the laying and maintaining of telegraph cables from foreign countries to the United States, subject to the foregoing stipulations, to the terms of such grants as have heretofore been made by Congress for these purposes, and to any and all rights of property and State jurisdiction in and over the same; provided that the privileges hereby conferred shall not be enjoyed by any company or persons whose line or cable extends to any foreign country where similar privileges are not conferred upon companies incorporated by the United States, or by any State of this Union; but this proposition shall not be applicable to any already existing or authorized line or cable except that recently landed on the coast of Massachusetts.

It will be seen that this bill practically takes from the owners of ocean telegraph cables all control of their property and interests, and vests the same in the Postmaster General. It is not believed that this bill, which is aimed directly at the French cable, though necessarily made general in its terms, can be adopted in anything like its present shape, even in the Senate, much less in the House.

With the exception of the above nothing of interest has transpired telegraphically, and as the columns of THE TELEGRAPHER must yet be overcrowded, I will not prolong this letter.

CAPITOL.

Vindication of the Boston Strikers.

BOSTON, MASS., Jan. 15th.

TO THE EDITOR OF THE TELEGRAPHER.

THE strike of the Western Union operators in support of their brethren in San Francisco came to an honorable termination, on the part of the loyal members of Circuit No. 3, on Thursday afternoon.

As we have been informed, the action of the Boston Circuit did much to influence members of other circuits to follow their example. A decent respect for the opinions of their fellow operators in other parts of the country renders it necessary that we should give some reason for this reaction, and with this purpose in view I take the liberty individually of giving you herewith a brief history of the movement, from the commencement to its close.

On Saturday, the 18th inst., information was received here that salaries were to be reduced in San Francisco, and that the members of the Telegraphers' League in that city were determined to oppose this reduction.

On Sunday, the day following, a long message was received by the officers in this city in regard to the matter, but the contents of that message were, at the time, and are still unknown to your correspondent. On Monday evening a meeting of this Circuit was called, and at this meeting a resolution was adopted to sustain the action of San Francisco. I am satisfied that at this time there was no idea of a general strike, but that the purpose of this resolution was to simply prevent operators from leaving here to fill the places of those engaged in the strike in San Francisco, and to subscribe to a fund for the support of those who were peculiarly affected by being obliged to suspend work. Here is where the great mistake was made on the part of Boston, for in passing this resolution to sustain their brethren in California they placed their time and their services at the disposal of the officers of the League, and when New York had withdrawn from the office, and orders were received here for Boston to "stop," we were obliged to do so. It may not be generally known that Boston was the only point in New England where a Circuit of the League was in operation, but such is the fact, and it was an easy matter to fill the places of those who left the instruments here by calling from other offices all around the city.

The company at once asked for assistance from Maine, New Hampshire, Connecticut, Massachusetts and the provinces, when they speedily obtained sufficient force to run the office until matters should be settled.

Day after day it became more and more apparent to the officers that the operators were determined to remain firm in their movement, and then they decided to hire operators to fill their places permanently. When this fact became known there was wavering in the ranks, and our best men thought it advisable to take some action in the premises. They informed the officer in New York of the condition of affairs here, and waited his reply in regard to his views. In the meantime it was learned that several of the strikers in Albany had applied for positions in this office, which produced a wonderful effect upon the whole Circuit, and if it had

not been for the cool manner in which the facts were handled by the leading spirits of this Circuit, a panic would have ensued which would have been a lasting disgrace to members of the fraternity in this city.

By dint of great exertion on the part of a few gentlemen a secret meeting of the League was called and was largely attended. At this meeting it was decided to dissolve the Circuit, and that to those who desired it an honorable withdrawal from the League be granted. After this had been done a paper was drawn up addressed to the manager of the Boston office, asking that the strikers be reinstated, or that they be considered as applicants for positions with the company. This paper was signed in alphabetical order, so that no one should have advantage of another, as shown by the paper.

A committee was appointed, and the document presented to the manager, who received the committee kindly and cordially. He informed them that there was no such thing as reinstatement, but that their applications for positions would be considered, and acted upon separately—upon this the committee, after thanking him for the kind treatment they had received at his hands, withdrew, and made their report to the meeting, which remained in session until the committee could be heard from.

Shortly after notices were received from the manager for three of the applicants to call at the office, which they did, and were given positions, and since that time many others have received similar notices, and with a like result. Of course it will take time for all to be restored, but, with the exception of a few special cases, most of the men in this city will return to the employ of the company.

Now then, I wish to put the questions, Has not Boston, as a Circuit, acted honorably? Have we not done what few others would feel bound to do?

Beyond this I have nothing further to say in regard to the movement that has been made. It was a hard struggle, but we have failed, and here let it rest. For my part I do not wish to hear the word strike again, and I believe I speak the minds of most of the operators when I say we have had enough of it, and are willing to work out our own salvation.

KNIBBS.

A Card.

TO THE EDITOR OF THE TELEGRAPHER.

YOU say, in THE TELEGRAPHER of last Saturday, Lenhart resumed work on Friday, and also say "Thurber and Baldwin were companions of Lenhart in his treachery." Now I beg leave to differ with you. I resumed on Monday, three days after, when all hopes of the strike were virtually dead, as I thought. I did not have the sinews of war to hold out all winter, and did not propose to fight it out on that line.

BALDWIN.

Self-Closing Telegraph Key.

LIMA, PERU, Dec. 13th.

TO THE EDITOR OF THE TELEGRAPHER.

SOME of your readers may perhaps have seen, in the *Journal of the Telegraph*, a communication relative to an automatic closing key, invented by our worthy engineer, Mr. John M. MacLachlan, who sent a notice of his ingenious contrivance to the editor of said paper, inquiring whether or not such system had ever been tried in the United States.

In reading the editor's reply, in the number of November 15, I remarked that he confounds the invention of Mr. MacLachlan with that of Mr. Frey, thus depriving him of whatever merit may attach to his peculiar method. Now, there is no similarity in these modes of automatic key closing, nor does any of the methods mentioned in the *Journal* bear such supposed identity with the invention of our friend. It is much more simple and practicable, without requiring any derangement in the ordinary manner of operating, as Mr. Frey's or W. H. Havens' does, in reversing the angle of the key, and closing the circuit with the back stroke, which tends to alter the usual advantage of the register, as well as the sound system of reading; all which abundantly proves to me that our colleague's contrivance for the self-closing key has never been thought of in the United States.

Yours,

HENRY J. DINEGRO,
Telegraph Superintendent.

A New Year's Reception.

WASHINGTON, D. C., January 4th.

TO THE EDITOR OF THE TELEGRAPHER:

THINGS, telegraphically, in the Capitol have been unusually dull, and nothing of interest to the fraternity generally has transpired for some time.

The correspondence in THE TELEGRAPHER seems to be improving, and the paper is eagerly perused by the fraternity here. One day's delay in its appearance caused

many anxious faces, and inquiries of "Has THE TELEGRAPHER come?" May THE TELEGRAPHER ever prosper.

On New Year's day Mr. Charles A. Tinker, manager Western Union Office, and Mr. W. H. Clarke, night manager, same office, gave receptions at their residences. The good things of earth were bountifully supplied to the majority of the operators in the city by the amiable ladies of the two gentlemen. Many good wishes were expressed for the future prosperity of the "managers and their families," and all expressed themselves highly pleased with the short but very pleasant moments spent under the hospitable roofs of their managers.

A much more friendly feeling is beginning to exist among the fraternity here, and we hope it may result in doing much good for the fraternity at large. Indications show that operators have at last acknowledged that in "Union there is strength." May it ever be so.

SPRING.

Matters in Louisville.

LOUISVILLE, Ky., Dec. 10th.

TO THE EDITOR OF THE TELEGRAPHER.

AM sorry "E. A. M.," in his article last week, did not say a good word in regard to our *magnificently furnished and comfortable operating department*, which I now purpose giving a pen and ink sketch of, though certain that I cannot do it full justice. Imagine a long, wide room, the ceiling of which exhibits unmistakable evidence of a "downward tendency" and cobwebs. The said ceiling has probably at some remote period undergone the beneficial and beautifying effects of a coat of whitewash, but the destroying hand of time has greatly dimmed its lustre, and its once bright, clean face has assumed a dingy, sooty aspect. Along the sides of the papered walls are the operators' tables; designed—the tables—certainly more for use than ornament; judging from their appearance I should say they have been used rather roughly; in fact very nearly "used up."

The P. and A. Company are doing an excellent business here, under the able and energetic supervision of Mr. F. M. Speed. This company has several branch offices scattered round town, all of which are generously patronized. Their office in the Galt House is presided over by Mr. A. R. Walsh—familiarily called "Tony," and by his most intimate friend "the Count"—whose good humored face and suavity of manners "takes" greatly with his patrons. It is rumored that the Western Union Company will soon open a branch office in the Galt House.

ELECTRA.

PERSONALS.

Mr. A. L. CREELMAN, formerly operator at Point of Rocks, U. P. R. R., has accepted the agency at Separation.

Mr. W. S. MAYNARD, of the U. P. R. R. line, has resigned, to engage in other business.

Mr. A. D. DIBBLE, formerly operator at Bitter Creek, U. P. R. R., has accepted the agency at Creston.

Mr. P. B. SHELDON, of the U. P. R. R., has resigned, and gone to Salt Lake City for his health.

Mr. W. S. MAYNARD, formerly operator for Union Pacific R. R. at Separation, W. T., has accepted a position with the S. and M. R. R. at Selma, Alabama.

THE TELEGRAPH.

(By Atlantic Cable.)

New Arrangements between the Ocean Telegraph Companies.

LONDON, Jan. 15th.—It is announced to-day that a working arrangement between the Anglo-American, the Atlantic, the New York, Newfoundland and London, and the Société du Cable Transatlantique Français Companies has been agreed to. The arrangement is finally settled between the directors of the companies, and it only requires to be confirmed by the shareholders.

The receipts of the three cables will be placed in a joint purse, and divided in the proportion of thirty-six and two thirds to the Société du Cable Transatlantique Français, and sixty-three and one third between the Anglo-American, the Atlantic, and the New York and Newfoundland and London Companies.

Should any of the cables, or the land lines in connection therewith, be interrupted at any time, the messages will be sent by the route which is open, without regard to the company which may have accepted them. Thus the public will be benefited, while the companies will have the advantage of their revenues being continued in the event of any of the cables being broken.

It is also understood that the Anglo-American and the Atlantic Companies are to be reconstructed on the basis of a common stock.

LONDON, January 18th.—West India and Panama telegraph stock is quoted at a premium.

A New Line between New York and Washington, D. C.

THE National Telegraph Company have commenced the construction of a two wire line between this city and Washington, D. C., and have already built a portion of the line between Baltimore and Washington. The American compound wire and Brooks' improved paraffine insulators are used. Mr. W. P. Westervelt, formerly Superintendent of the United States and Western Union lines, has charge of the construction between Philadelphia and Washington, and Mr. Robert J. Brown, formerly Superintendent of Supplies of the United States Company, is engaged in securing the right of way, and will have charge of the construction between this city and Philadelphia. By an arrangement between the company and the proprietors of Mr. George Little's automatic telegraph patents the inventions of that gentleman will be used in working the new line, which, if successful, it is understood, will be the initial section of a general system of telegraph throughout the country.

A Marine Telegraph.

At a meeting of the New York Shipowners' Association of this city, on Wednesday, January 12th, a communication was received from Walter Hearn, of the Philadelphia and Southern Steamship Company, asking the association to what extent it would be prepared to assist in establishing a Floating Electric Telegraph Station, similar to the one now in process of construction in England, and intended for use some fifty or sixty miles off Penzance. The advantages to be derived from such an institution by the public are insignificant compared with the benefits to be derived by shipowners. A ship reporting herself could, within an hour of her making herself known at the Telegraph Station, be ordered at the pleasure of her owner.

The British Indian Submarine Cable.

THE cable, 3,600 nautical miles in length, for this company, was completed at Greenwich on the 11th December. The manufacture of the outer covering of this cable was commenced at Greenwich on the 23d of June last; it has, therefore, been exactly five months and eighteen days in course of manufacture—equal to 147 working days—which gives an average speed of manufacture of $24\frac{1}{2}$ nautical miles per diem. This is probably the greatest average speed of manufacture ever before obtained for such a long and important cable, and it is further stated that its electrical condition throughout the entire manufacture has been practically perfect.

TELEGRAPHIC BREVITIES.

A TELEGRAM from London, of the 31st of December, reports: One of the principal features of yesterday's business was a continuance of the speculative excitement in submarine cable shares. The advance in telegraph construction shares was promoted by the failure of a speculation for the fall.

The New York Herald correspondent at Lima, Peru, in a communication dated Dec. 22d, says: Another competitor for the telegraph line from Lima to Panama has appeared in the shape of a regularly organized English company. As a privilege and subvention are requested by this company, it is almost certain that the government will accept Mr. Paz-Soldan's plan, already communicated to the Herald, in which nothing is asked from the government. That so many individuals and companies should be seeking this line is a semi-proof that the enterprise will be a success. Without a line from Cuba to Aspinwall, however, the proposed line would rather be of a tantalizing than of a beneficent nature."

A beacon at Granton, Scotland, was lately, as an experiment, illuminated by an electric light. A magnetic battery, generating the electricity, was stationed on shore, whence the fluid passed through a submarine cable fully half a mile long. The light was made to flash in front of a mirror at the top of the tower, the flashes being quite brilliant, and, with the machine in use, counting as high as five hundred per minute.

Ocean Telegraph Monopoly.

THE London Economist of the 1st of January, under the above heading, says: "The rapidity with which the usual phenomena of an imperfect monopoly have shown themselves in oceanic telegraphy has been very marked. It is only a few months since we pointed out the danger to which the business was exposed on this account, and events have since amply shown the necessity of monopoly to profit, and the certainty of every monopoly being invaded. The statement this week that negotiations are in progress for a joint purse arrangement between the Anglo-American and the French Cable Com-

panies, shows that in the most conspicuous trade, where the business is likewise most developed, the measures of self-defence which railway competition has made us familiar with, are being resorted to. There is nothing to prevent a third company coming on the scene for a share in the joint purse. Perhaps, if the American government, instead of merely proposing an international arrangement for the neutrality of cables, were to propose a general scheme by which the cables would be managed jointly for the benefit of all the communities concerned, they would really be proposing something which is of urgent interest. How to deal with monopolies which are not restricted to one nation, but are international, is certain to become a question of importance at no distant date.

Improved Telegraph Instruments.

THE telegraphic machines lately come in use are, it would appear, as near perfection as human ingenuity can contrive to get. Unless we are favored with instruments that can work by their own volition, and without the aid of operators, we think improvement in that direction has reached its limit.—N. Y. Express.

The Isthmus of Darien Survey.

THE United States gunboat Nipsic takes out an expedition for the thorough survey of the Isthmus of Darien, with a view to the construction of a ship canal to unite the Atlantic and Pacific Oceans. Messrs. W. H. CLARK and M. MAREAN, heretofore of the Washington office of the Western Union Company, go out with this expedition in a telegraphic capacity. They take with them wire, instruments, and battery material to establish telegraphic communication between the surveying parties and the headquarters of the expedition.

Not the Man.

MR. HENRY R. WILLIAMS, of the Milwaukee and St. Paul Railway Telegraph, at Prairie du Chien, desires us to state that he is not the HENRY WILLIAMS who, last fall, under pretence of needing help, victimized a number of operators in Illinois and Wisconsin, by borrowing money, etc. He cannot, therefore, respond to the numerous epistles received from the victims of his namesake, asking the repayment of such loans.

New Patents,

For the week ending Jan. 18, and each bearing that date.

No. 98,880.—Electro-Magnetic Car Brake. JOSEPH OLMSTED, Knoxville, Ill.

Claim.—1. The combination of the axle A', friction roller c, and armature E, with the friction plate D and magnets d d, of an electro-magnetic battery, arranged and operated substantially as set forth, for the purpose of causing the plate D to be held in contact with the armature E, and revolve, to be released, and remain at rest, as desired.

2. The shaft B, supported at one end by the swinging arm B', or its equivalent, for the purpose set forth, and the roller c, in combination with the chain f and lever F, substantially as shown and specified, to increase the pressure of the roller c against the axle A, and prevent it from slipping while the brakes are acting on the wheels.

3. The shaft B, having lateral play at one end, for the purpose set forth, in combination with the friction plate D, magnets d d, and wires d d of an electro-magnetic battery, arranged and operated substantially as specified.

No. 98,927, ante-dated January 10, 1870.—Telegraphic Apparatus.—HENRY COOK, Paris, France.

Claim.—The adaptation to synchronous printing, or writing telegraphic mechanism, of the double threaded screw A, and self reversing rider or point-carries a c d, in combination with a type truck E, moved forward at right angles to the tracer, by the step-gear F G, the whole arranged and operated in the manner and for the purpose substantially as herein specified, and shown in the figures of the accompanying drawing.

Recent British Patents.

Provisional Protection for Six Months.

No. 3,340.—WILLIAM BAYLISS and MOSES BAYLISS, Monmore Green, Wolverhampton.

Certain improved methods for making or producing cast iron earth screws for the lower parts of fence, telegraph and other posts or supports, and which said improvements are also applicable for other purposes.

No. 3,363.—JOSEPH BURWUGLER, Jr., Newark, New Jersey, U. S. Improvements in electro-magnetic machines, and in magnets for the same, and for other purposes.

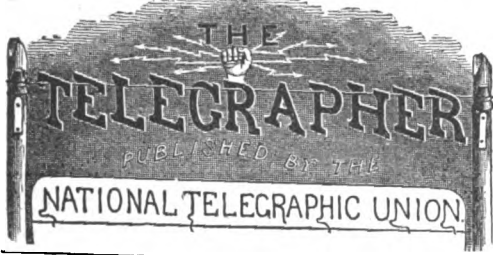
No. 3,396.—DAWSON MILES, Boston, U. S. An improved mode of, and apparatus for lighting and extinguishing gas by electricity.

No. 3,489.—FREDERICK CHARLES WEBB, Northumberland Terrace, Regent's Park Road.

Improvements in the manufacture of submarine telegraphic cables, and in the machinery employed in such manufacture.

No. 3,537.—JAMES WATSON, Montrose.

Improvements in electric telegraph apparatus for continuous printing.



SATURDAY, JANUARY 22, 1870.

J. N. ASHLEY.....Publisher and Editor.

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THE TELEGRAPHERS' STRIKE.

THE movement of a portion of the employés of the Western Union line to sustain their brethren on the Pacific coast against what they considered unjust and unreasonable treatment, has virtually terminated. It is with heartfelt regret that we are compelled to acknowledge that the result has not been favorable. Capital, in this instance, has proved too strong to be successfully coped with by labor, and the Western Union Company is practically master of the situation.

The readers of THE TELEGRAPHER have been so fully informed of the origin and progress of this movement that any recapitulation of the facts is unnecessary. It was one of the most formidable movements ever undertaken by the telegraphic profession, and, for a time, there was a good prospect of success.

The number of telegraphers who have taken part in this effort for justice is not as yet fully known, but it was very large, and embraced a very large percentage of the good operators in the employ of the Western Union Company.

The causes which have led to the defeat of the movement we will briefly and candidly state:

In the first place, it was commenced by the San Francisco telegraphers without the needed consultation and previous coöperation of their Eastern brethren. Smarting under oppressions and insults, which appeared to them too grievous to be borne, even temporarily, they acted impulsively, and, as it appears to us, precipitately. Their position was aggravated by the treachery of one of their number in the San Francisco office, who betrayed the League and pointed out to MUMFORD, the Western Union manager on the Pacific coast, whom to strike first in his attempts to crush out the League. The first man discharged was the Chief Operator of the San Francisco Circuit of the League. The manner and reason for his discharge proves that a pretext was sought to discharge him as a blow at the League.

It seems to us now, as it has from the first, that it would have been better for our California friends to submit temporarily to their grievances, and appeal from the tyrannical and oppressive action of this MUMFORD to his masters, the executive officers of the company.

In the next place, the Western Union Company practically controlled the only avenue of immediate communication between the Pacific coast and the East. It takes about sixteen days to communicate by mail and receive a reply. This gave the company a great advantage, which was made use of to the fullest extent. It enabled the officers of the company to obtain the statements of MUMFORD and circulate them over the whole country, thus causing the public to believe that there was not sufficient cause for the extreme action of the operators, and that the company was practically in the right, and justified in resisting unreasonable demands of its employés.

When the true statement of the case was received the mind of the public was, to a great extent, made up on the subject, and this unfavorable conviction it was found difficult, is not utterly impossible, to remove.

Again, the strike occurred at an *unseasonable* time. Congress had taken a recess. It was during the holiday time, when business is always light, and of a character not seriously affected by temporary delay in its transmission. The company had a whole week in which to prepare for the large amount of business which the session of Congress always throws upon its lines. This time was used to demoralize the strikers, and by working upon those who were weak and unstable, and who had joined the movement in the belief that it would last but two or three days, they succeeded in inducing a few of them to return to duty, thus breaking the confidence of those engaged in it in each other. When these saw those who had solemnly *sworn* to stand by them proving false to their oaths and their plighted honor, what confidence could they have in the integrity and stability of their associates? All these influences operated strongly against the probability of success.

The result of this movement has shown that although the League had become strong, and was extending and increasing rapidly in numbers, it was not prepared for extreme measures against so extensive and powerful a corporation as the Western Union Company. It did not cover the whole of the Western Union territory, even, as the Boston Circuit was the only one East of New York, and in other localities it was yet weak or did not exist at all. Its general organization had not been perfected, or such a movement commencing at the extremity of the lines would have been impossible.

The existence and purposes of the League were known to MUMFORD and to other officials of the Western Union Company, and the precipitate action in California afforded the desired opportunity to destroy or cripple it. There is good reason to believe that it was the intention of MUMFORD to bring on a conflict which should develop the extent and power of the League, in the belief that it could be better met now than hereafter, when it should have become more thoroughly organized, and embrace a larger percentage of the telegraph employés.

It has been very generally and confidently asserted by the Western Union officials that the strike was organized and ordered from here, to serve interests other than those of the employés themselves. This statement we *know* to be untrue. The movement was unexpected here, the first intimation that such a thing was contemplated having been received here on Friday or Saturday previous. A storm prostrated the wires and prevented communication, and meantime MUMFORD goaded the San Francisco men to desperation. In fact, so little was known about it that the writer had no intimation of such action until the Cincinnati and Chicago offices went out on Monday, January 3. The movement, whether well or ill advised, was made by the employés on their own account, and without thought of its effect on the value of the stock of the company, or its bearing upon the competition with other companies.

From the first the Western Union officials scouted all idea of compromise, or that their employés might have just cause for complaint. In fact it was denied that the employés had any rights other than those which the company saw fit to concede to them. It was further announced that the whole value of the company's property would be sacrificed, as well as the interests of the patrons of the line, before any concession should be made. It was also calculated that the necessities of the employés would prevent a prolongation of the strike beyond a few days. At first, before the extent of the movement was known, it was asserted that no man engaged in the affair would be received back upon any terms. As it was found that adherence to this would compel the company hereafter to do its business with a *very* reduced force, comprised mainly of plugs, this idea

was abandoned early in the fight, and deserters were welcomed with a cordiality beautiful to behold.

Under the circumstances the result is not surprising. We will not indulge in further denunciation of those who saw fit to abandon their brethren, and secure themselves a first chance at the treasury of the company. If their own consciences excuse them we will not reproach.

In conclusion, we would say that, while we have no favors to ask of the Western Union Company, a kind and conciliatory policy will be found most advantageous in the end. If the victory is used generously, and unnecessary humiliation is spared those who now return to the employ of the company, a more cordial feeling may be established between the company and its employés than has heretofore existed. If a disposition is shown to restrain the tyranny and oppression of subordinates, and afford redress for grievances which may be shown to exist, this affair may not prove utterly without compensation for the damage and suffering which has and must result from it.

Those who return to duty we would advise to obliterate from their minds, as far as possible, bitterness and antagonism, and strive to do their duty so faithfully that their services may become more valuable and be better appreciated than ever before. By just and generous treatment of its employés the late American Company secured not only the services but also the regard and esteem of the bulk of its employés. It was pecuniarily successful, and is remembered with regret by those who were formerly in its employ. Similar treatment from the Western Union Company would, no doubt, have a similar result in the case of *its* employés.

In conclusion, one word for ourselves. As the organ of the telegraphic employés of the country this paper has always fearlessly defended their rights, and exposed the wrongs practiced or attempted to be practiced upon them. In so doing we have frequently been compelled to criticize and condemn the course pursued by the officials of the Western Union Company. In this we have not been actuated by antagonism to the company but by what we considered to be our duty to the profession. Whenever we have found anything to commend we have cheerfully recognized the fact. It is always more pleasant to praise than to censure, and we trust that, learning wisdom from experience, the course of that company and of its officials hereafter will be such as to enable us to approve instead of condemning—to praise and not to blame.

A Card to the Members of the Telegraphers' League.

WE have received, too late for publication this week, an address from R. W. POPE, G. C. O. of the Telegraphers' Protective League, to its officers and members, giving the reasons and explaining the necessity for the extreme action taken, and of the failure of the movement. It demonstrates what we have elsewhere stated, that the conflict was purposely forced upon the California circuit; that the difficulty could easily have been settled, even after the strike had commenced, if the Western Union officials had not manifested a determination that it should be continued, at whatever cost, to the bitter end. In conclusion, mutual kindness, justice and forbearance is counselled, in the hope that extreme measures may hereafter be unnecessary. We shall publish the address next week.

Packard's Monthly.

THE February number of *Packard's Monthly* is out promptly, as usual, with a varied and interesting table of contents from able and well known contributors.

We have so often expressed our favorable opinion of this excellent magazine that there is little to add to what we have heretofore said in regard to it. The present number well sustains the excellent reputation which Mr. PACKARD has, by his ability, discrimination, tact and liberality, established for it.

The Telegraphers' Ball.

THE annual ball of the New York telegraphers came off at Apollo Hall on Tuesday evening last. We were unable to be present, but understand it was a very pleasant and enjoyable affair. The attendance was not as large as usual, owing to the recent disturbance between the Western Union Company and its employes, but we are informed that, notwithstanding, it was pecuniarily successful.

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By arrangement with the English publishers Mr. D. VAN NOSTRAND, the well known and extensive publisher of professional and scientific works, will re-publish here the new edition of Mr. CULLEY's valuable *Hand-book of Practical Telegraphy*. The price of the work will be \$5.

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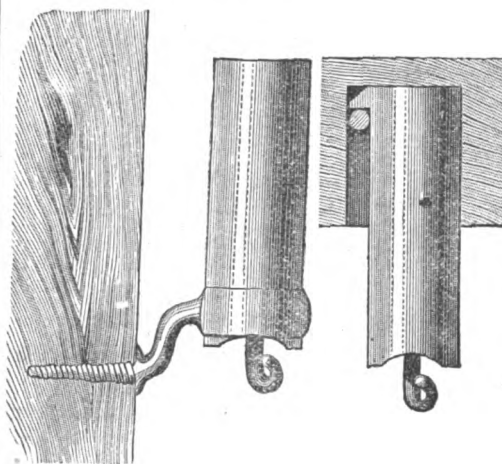
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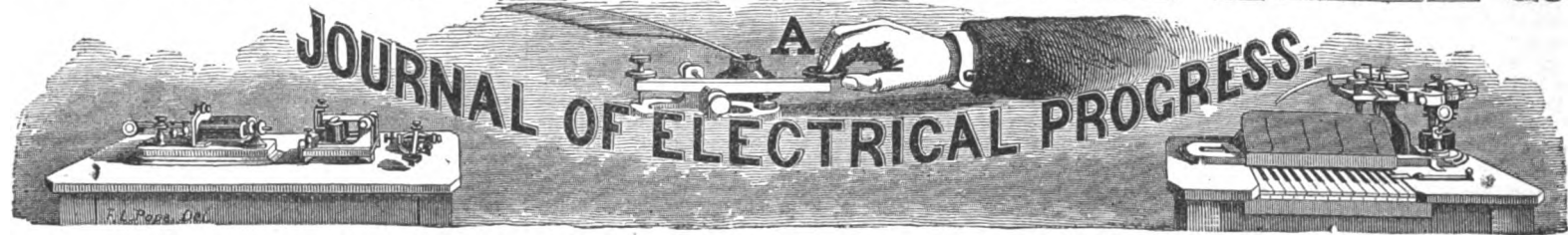
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THE TELEGRAPHER.



Vol. VI.—No. 23.

New York, Saturday, January 29, 1870.

Whole No. 185.

TO THE MEMBERS OF THE TELEGRAPHERS' PROTECTIVE LEAGUE.

NEW YORK, January 19th.

TO THE OFFICERS AND MEMBERS OF THE T. P. L.

FROM among the various rumors and conflicting statements which have appeared regarding the origin of the late strike on the Western Union lines, different opinions have arisen as to the necessity for such action. Now that the movement on the part of the operators has terminated, and all can review the late campaign with calmness, it may readily be seen that our strength was equal to the emergency, but that our efforts were misdirected, by undue haste to involve the whole League in the struggle. Having placed implicit confidence in our California brethren, from the very outset, and having since learned the details of the first movement on their part, I am fully convinced that, as men, they could not have avoided the contest. The treachery of one of their members was the means of precipitating action, through the discharge of the entire working force of the Sacramento office, merely for exercising their individual rights in determining to sustain the action of the San Francisco operators, should they deem it expedient to resist the proposed reduction.

It was a deliberate attempt to crush out this spirit of independence, which had been thus manifested, and if the action was hasty we may know where the blame rested, unless it is considered wrong that a petition should have been presented protesting against a proposed reduction of salaries.

The last messages received from San Francisco, at the commencement of the strike, showed that they were confident of holding their own on the Pacific coast, with no other assistance from the East than the prevention of operators being sent to fill their places. The letters which we have received confirm this view of the situation as it originally existed. Although the Western circuits were notified on the first of January that San Francisco would decline a reduction on the 3d inst., they were also instructed *not to move until ordered*, as it was feared that precipitate action might bring trouble on us, and involve all the circuits in one desperate struggle. Owing to the storm which prevailed on the 2d inst. communication with the West was cut off, and it was not until the afternoon of the 3d that we learned that Cincinnati, Chicago, and all circuits west had suspended work. So far as Omaha was concerned this course may have been necessary, but if the strike along the overland line and on the coast was as complete as has since been reported, California business was virtually suspended, without any action east of Corinne. It was in the power of Mr. Mumford to settle the difficulties in California, and, in the event of his refusing to do so, negotiations with the Executive Committee in New York were next in order. The action of the circuits in Gen. Stager's Division merely exasperated the company, without bearing upon the point at issue. This premature action so complicated the affair that there was but one alternative left, which was to make as hard a fight as possible—and with nearly every remaining circuit clamoring for an immediate movement the pressure could not be resisted. The question, after the second day, became one of endurance, and with so large a proportion of our members idle there could be but one result, unless we received financial support from outside parties. In this respect we were assisted in this city by the noble action of Typographical Union No. 6 and the National Telegraphic Union, but this was, of course, insufficient to supply the needs of all who were calling upon us from other parts of the country. The promises of aid which we received gave us hope for a time, but the fact that many of our members lacked faith weakened our ranks, and the movement failed rather from sheer exhaustion than voluntary desertion.

It is to be regretted that the struggle was not confined to the Pacific coast, where the whole difficulty was thoroughly understood, especially when our members there were confident of maintaining their movement for one or two weeks without any demonstration in the East.

Throughout the entire struggle we were confronted not only by the power of the Western Union Company, but by the repeated rebuffs and antagonism of nearly every newspaper subservient to that corporation, by their dependence upon the Associated Press despatches. The Southern press, however, advocated our cause, even while deprived of their usual reports, knowing that it was in the power of the company to bring about a settlement at any moment.

Most of our members being without experience in a movement of this kind, and believing that the consequent interruption of business could not be suffered to endure for any length of time, were not prepared to sustain a siege. We have seen that the legitimate duties of the telegraph were sacrificed, in order to carry out the principle that labor has no rights which capital is bound to respect. The plea that business could not be properly transacted, or messages entrusted with members of the League, is ridiculous. No trouble would have arisen had not Mr. Mumford attempted the reduction of salaries, and matters would have gone on as smoothly as heretofore. A satisfactory adjustment could have been easily made, had one been desired on the part of the Western Union Company. It was determined to force war upon us and it was done. Had we opened the attack I will venture to say that we would have succeeded on our own merits, without the aid of falsehoods and the support of a subsidized press.

We were surprised at our most distant outpost, and our only plan of action was ruptured through a misunderstanding, or a disregard of orders intended to prevent the very catastrophe which has come upon us.

The Western Union Company has already given evidence of its future policy by compelling its operators to renounce the League, and to pledge themselves not to join any similar organization—by refusing to employ our officers, some of whom are among the best operators in the country—and by reducing the salaries of others, who are forced to return to their employ. The result of this policy will not be immediately developed, but it is reasonable to suppose that where undue advantage is taken of intelligent men, at a time when they are weak, they will not hesitate to retaliate whenever an opportunity is afforded them. By mutual efforts at conciliation a repetition of our late experience may be easily avoided, and it is to be hoped that all parties concerned in the strife will avoid the pursuit of any vindictive policy.

R. W. POPE, G. C. O.

The Hubbard Postal Telegraph Scheme.

In the U. S. Senate, on Thursday, January 20th, Mr. Ramsay, of Minnesota, introduced a bill to establish a postal telegraph system, and to incorporate the United States Postal Telegraph Company. It authorizes the Postmaster-General to establish telegraph offices in connection with the post-offices in every city and village where telegraph stations are now maintained, and at such other places on the line of the telegraph as the business of the company may require; to provide for the reception of messages at every postal telegraph office, sub-office and street letter-box, for their transmission between postal telegraph offices, by contract with the Postal Telegraph Company, and for their especial and immediate delivery where a letter delivery is provided by law, or within one mile of every postal telegraph office where there is no delivery, and a delivery at special rates beyond such limits, excepting messages transmitted at night, which shall be delivered the next morning. He is also directed to pro-

vide for the transmission of messages by mail to or from the nearest postal telegraph office, when received for or destined to any place not having such an office; for the transmission by telegraph of postal money orders; for the transmission of the message in special cases; for priority of transmissions, and for transmissions where the whole amount has not been paid. The rates to be prepaid for transmission and delivery of messages of twenty words or figures, or less, including date, address and signature, shall not exceed twenty-five cents for each and every 500 miles, or fractional part thereof, measured in an air line, and for each additional five words or figures, or less, one fifth of the above rates. But the rates for messages directed to be transmitted by night shall not exceed twenty-five cents for each and every 1,000 miles, or fractional part thereof, and for each additional ten words one fifth these rates. The rates shall be prepaid by telegraphic stamps, and shall cover the expense of the post-office of immediate special delivery, and of transmission by mail, where required, to or from any postal telegraph office in the United States. The bill authorizes a contract to be made with the Postal Telegraph Company for ten years, upon their furnishing security for the performance of these requirements. The Postal Company is authorized to make special contracts for the transmission of press messages, the rates not to exceed five mills per word by night and seven and a half mills by day for every 500 miles. Where the same message is delivered at the same office to several newspapers but one rate shall be charged, with the necessary cost of manifold copies, when made by the company, and the rates for the Associated Press news shall not exceed those now paid by the several press associations to the Western Union Telegraph Company. A postage of two cents shall be paid on each press message: but where copies of the same message are dropped off at several offices but one postage shall be paid. The Postmaster-General shall, from time to time, reduce the compensation to be paid to the company, and the rates to be paid by the public for the transmission of messages; provided that the net income of the company (after the payment of its operating expenses) shall not thereby be reduced below ten per centum per year on the capital stock of the company. Telegraph stamps are to be provided, &c. A commissioner of telegraph is to be appointed, and punishment provided for divulging the contents of messages, or wilful obstruction of their transmission. The eighth section incorporates Gardiner G. Hubbard, S. W. Bates and Estes Howe, of Massachusetts; Woodbury Davis, of Maine; A. P. Killer, of Ohio; John F. Tracy and E. D. L. Sweet, of Illinois; R. Blakely, of Minnesota; B. F. Allen, of Iowa; W. F. Downs, of Kansas; Chas. G. Hammond, of Nebraska; L. L. Barnes and G. R. Weeks, of Arkansas; S. A. Stockdale and J. J. Noble, of Louisiana; Charles J. Pollard, of Alabama, and John P. King, of Georgia, and Peter Parker and Anthony Pollak, of Washington, as a body politic, under the name of the United States Postal Telegraph Company. Finally, it is to be provided that, at any time after five years from its organization, the Postmaster-General may purchase the property and franchises of the company, on terms to be fixed by five disinterested persons—two to be chosen by the Postmaster-General, two by the company, and the fifth by those four—provided that the terms shall be approved and the purchase consummated by Congress.

The British Telegraphs.

A LONDON correspondent of the *New York Times*, under date of January 8th, writes:

The opening of telegraph wires at every post-office in the United Kingdom has been attended with more labor than was expected. Wire, poles, instruments and fittings were needed in such quantities it was difficult to supply them; but all will be ready by the 1st of February.

The Morse system of signals has been adopted, and every office has to supply itself with operators; these will be mostly young ladies, from 16 upwards. The Government has established schools of instruction, and furnished every office with a dummy instrument to learn on, and a book of plain instructions. New blanks have been prepared, allowing five words to each line, to facilitate counting. An ardent reformer now proposes that wires should be laid into every house, like gas or water, each one communicating with the nearest post-office, so that every Briton, without leaving his library table, could send a message to America or India, or to the lady over the way. The pay to the sub-offices is a penny a message, or eight shillings a week. The learners, as soon as they show a certain degree of proficiency, are rewarded with a sovereign. The railway stations will keep their telegraph offices as usual, and the time is not far distant when the Government will work the whole railway as well as telegraph system, working both at cost, for there should be no tax on either movement or intelligence.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our Correspondents. Our columns are open to free discussions on all Telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., Jan. 26th.

TO THE EDITOR OF THE TELEGRAPHER.

THE telegraph in its various phases is now before both houses of Congress, and bids fair, before the session is over, to occupy much of its time. While the postal telegraphers do not expect to accomplish anything definite at the present session, yet they intend to agitate and get things in shape for future operations.

On Thursday of last week Mr. Ramsay introduced Gardiner Hubbard's Postal Telegraph Company scheme in the Senate. This, the most absurd of all the absurd projects ventilated in connection with the telegraph, is embodied in a long bill, which was referred to the Committee on Post-offices and Post-roads, and ordered to be printed. It is entitled "A Bill to establish a Postal Telegraph System, and to incorporate the United States Postal Telegraph Company." A more proper title would be "A bill to destroy the value of telegraph property in the United States, impoverish the stockholders and victimize the Government." (A synopsis of this bill is published elsewhere.) It depends upon the Committee whether this scheme is heard of again, but it probably will be some time during the session. As Senator Ramsay failed to make a postal treaty with France he regards himself as an expert in all postal matters.

In the Senate, Friday, the 21st, Mr. Fenton presented a memorial of W. C. Barney, asking certain privileges, so as to enable him and his associates to connect the United States and the kingdom of Belgium by direct submarine telegraph cable, including a translation of the Belgian concession.

In the House of Representatives, on Monday last, Mr. Cadwallader Washburne, of Wisconsin, introduced his bill to establish postal telegraph lines, a synopsis of which has already been published, and moved to refer it to a special committee of seven.

Mr. Farnsworth called for a division, and remarked that the matter was already before the Post-office Committee.

Mr. Perry moved to refer the bill to the Committee on Post-offices and Post-roads, but on a division this was negatived by a small majority, and the bill was then referred, without a division, to a special committee, of which, by parliamentary usage, Mr. Washburne himself will be chairman. This committee will have power to send for persons and papers, and under Mr. Washburne's management will doubtless make as good a case as possible for Government going into the telegraph business. An equally good case can be made for a Government postal express system, and some of the extremists openly advocate the idea of the Government assuming not only the telegraph but also the entire express and railroad business of the country. One is about as reasonable as the other.

CAPITOL.

Automatic Telegraph Process.

HARRISBURG, PA., January, 20th.

TO THE EDITOR OF THE TELEGRAPHER.

THE pamphlet issued by the Executive Committee of the National Telegraph Company, on the merits of Little's Automatic system of telegraphy, is, to say the least, an extraordinary production. The argument runs into a flight of fancy which amounts almost to a burlesque, and the real merits of automatic telegraphy are covered up under a mass of bombast and buncombe. In order to

exhibit, in as favorable a light as possible, the *slow* process of preparing messages for transmission by Little's perforating apparatus, it is stated that the average speed of the Morse system is less than 800 words per hour, whereas it is at least double that. It is proposed to employ "children," "girls and boys," to compose messages. Why not go a step further and inaugurate a corps of wooden infants, provided with stout cast iron brains, that would last a lifetime, to "do" this branch of the work. It is proposed to send out the strip as it comes from the instrument, and let the patrons decipher the characters for themselves. This will enable the company to reduce the tariff 5,000 per cent., and establish a sinking fund, which, in six months, will wipe out the entire cost of the line and its equipments, and put \$5,000,000 into the pockets of the Executive Committee. Should the patrons have any difficulty in deciphering the characters they can send the strip to the nearest telegraphic institute, where the pupils would willingly make a good round hand copy—warranted "unerringly accurate"—for the sake of the practice.

It is stated that "Mr. Little discards entirely the use of electro-magnetism, which is the rock upon which all other inventors in automatic telegraphy have been wrecked. This is one of the most beautiful features of Mr. Little's wonderful invention," &c. Then Mr. Little has discarded a trump. When his system is brought into actual service he will frequently find use for magnets, although the direct circuit, without magnets, is the most rapid. The difficulty in the way of the introduction of automatic telegraphy has not been in consequence of the use of electro-magnetism, for in nearly all the automatic systems extant electro-magnetism has been discarded, and the direct circuit and chemical paper have been used. Bain accomplished, long since, all that is claimed for the Little system in the way of rapid transmission. Therefore, when it is claimed that the discarding of magnets "is one of the most beautiful features" of Little's plan, one is led to inquire why it is that this feature is any more beautiful now than it was twenty years ago. The TELEGRAPHER of December 14, 1857, contains an article on automatic telegraphy by Alexander Bain, which describes his process, and plan of transmitting upon several wires at the same time, and dropping copies at intermediate stations, at the rate of twenty thousand words per hour. I do not see wherein Mr. Little has improved upon Bain.

The reason why automatic telegraphy has not been a practical success is not due to any failure to transmit and record rapidly and accurately, but to the want of some rapid economical mode of *preparing* the matter for transmission. It is in this direction we are to look for a solution of the problem. The other part—that of transmitting and recording at a very rapid rate—has been repeatedly demonstrated.

It is claimed that by Little's plan 800 or 900 words can be prepared for transmission per hour. This is a low rate of speed compared with my method, by which 1,800 to 2,500 words per hour are composed by a process at once familiar to all operators. My automatic system bears the same relation to automatic telegraphy that the Morse system of handwriting does to all other systems. It can be handled with facility and worked cheaply. I have utilized the Morse strip; and from it, by means of simple devices—not "in the hands of a child," but controlled by mature brain-motor—messages are transmitted and recorded at a rate of speed equal to that of any punched paper process. C. WESTBROOK.

Progress of the Telegraph in South America.

LIMA, PERU, S. A., Dec. 13th.

TO THE EDITOR OF THE TELEGRAPHER.

THE several communications that in time past I have sent you, and which have been honored with a place in your columns, may have been read with interest in your fraternity, inasmuch as they showed what we proposed to do here when they were written; now that much of that proposed work has been accomplished, your readers will no doubt be gratified at being informed of our present state of advancement in a work of such world-wide interest—as, besides the local importance of the telegraph in the country where it may be located, it becomes in that country a link of a great chain that will eventually connect all the countries of the globe in social intercourse with one another.

South of this capital, to the distance of nearly three hundred miles—that is, as far as the rich wine city of Yca—telegraphic correspondence is in constant operation, embracing nine intermediate stations. This line will be continued along the coast to the port of Islay, five hundred leagues from the capital, to connect with the line already in operation between said port and the great city of Arequipa, which is now fast rising again, phoenix like, from its ashes, and the ruin caused by the earthquake.

North of us the line is in operation some hundred miles beyond Truxillo, the ancient capital of Pizarro,

say about nine hundred miles, embracing ten important commercial points, and is being continued almost an equal distance further on, to connect with the lines already in operation, which have likewise been completed between the great port of Paita and city of Piura, whence it will go to Tumbes, to connect with the proposed submarine cable between that port and Panama, a distance of 1,200 nautical miles.

Another section of work east of Lima, to connect this capital with the rich mining district of Paser, and thence on to other important agricultural and pastoral points of the interior, is in the hands of the constructing engineer, Mr. Weldom.

The operators at all the stations are natives, who have studied their profession in the company's telegraphic school in this city, under my direction.

The general government has devoted a little of the national guano wealth, to the amount of half a million of dollars, to further the good work of extending the telegraph throughout the vast interior of the Republic. In reaching this additional link of electrical chain, it may perhaps most surely be continued to embrace at once the allied Republic of Buenos Ayres, through Chili, especially Ecuador. From the latter influential official assistance is being extended already.

A valuable grant has been obtained by the Vice-President of the company, Senior Mariano Felipe Paz-Soldan, our Minister of Justice, etc., to establish, by means of a private company, a telegraphic submarine cable between any port of the Territory of Peru and Panama, touching at various points of the State of Ecuador.

According to the terms of the charter the company is to raise the necessary capital, and to divide it into one thousand two hundred shares, of two hundred and fifty dollars each. The right of preference for Government messages is reserved; the cable is to be in operation within four years after the signing of the contract; the maximum of tariff is fixed at seven dollars for a message of ten words; the books are to be opened at once, and as arrangements are now favorably progressing with the India Rubber and Gutta Percha Telegraph Works Company in London, to make and lay the cable, the work will no doubt be soon accomplished.

The great importance of this communication, which shall unite the North and South Polar countries of America, and which shall place us in immediate contact with Europe and Asia, will, in the end, give renewed and permanent life to this great commercial centre of the Pacific, and a guarantee to the persons who will invest their money in this national colossal work.

HENRY J. DINEORO,
Telegraph Superintendent.

TO CORRESPONDENTS.

AUSTIN.—Your subscription expires with No. 205.

HYACINTHE.—Will attend to your letter next week; crowded out this week. If you have read THE TELEGRAPHER, however, should suppose you must have already had an answer to your question.

PERSONALS.

Mr. W. J. HOVEY has been transferred from the White House, N. J., station of the Central R. R., of New Jersey, to night duty at Jersey City.

Mr. P. MIXSELL has been transferred from "W." to day duty at the Junction, and Mrs. W. BRAY from "So" to "N. H." on the same road.

Mr. W. T. GOUNDIE resumed telegraphing on the 15th January, as night operator at White House Station, N. J., on the same road.

Mr. SARGE PEABODY is book-keeper for a firm of railroad contractors, and is located at Cairo, Ill.

It is understood that R. F. WEITBREE, B. B. GLASS, O. K. NEWTON, W. M. SPINK, G. K. SMITH, and others of the late operators in the Cincinnati office of the Western Union Company, have, as a result of the recent strike, permanently abandoned the business.

Mr. P. H. BURNS, formerly of the Western Union Boston office, graduated at the Howard Law School on the 14th inst.

Mr. K. H. WADE, for some time past train despatcher on the I. C. and L. R. R., has been appointed superintendent of telegraph and train master of the Illinois Division T. W. and W. Railway with headquarters at Springfield, Ill., vice H. LOOSLEY, resigned.

Mr. ED. RUSSELL has been transferred from the Junction to "K. J." (supt's office) on the central R.R. of N. J., and Mr. C. L. SUYDAM from "K. J." to Newark, as ticket agent and operator.

Mr. J. H. TOWNSEND, formerly of the Washington, D. C., Western Union office, has accepted a situation in the Commercial News Department of the W. U. Co. in this city.

Mr. GEORGE A. WEBSTER has been transferred from Lookout Station to the Wyoming Station of the Union Pacific R. R.

Mr. ORRIN JENKS, formerly of the Western Union Telegraph office at Titusville, Pa., has accepted a situation with the Allegheny Transportation Company, at the National Wells.

Mr. T. P. COOK, lately manager of the Lawrence, Kansas, office, has been transferred to Kansas City, as assistant superintendent of the Western Union Telegraph.

Mr. JOSIAH A. HARD has been transferred from the Topeka to the Lawrence, Kansas, Western Union office, as manager of the latter office.

THE TELEGRAPH.

(By Atlantic Cable.)

Safety of the Great Eastern.

LONDON, Jan. 24.—Much anxiety has lately been felt here for the safety of the steamer Great Eastern.

A vessel which arrived yesterday brings the gratifying news that the steamer was spoken on the 5th of December, in the South Atlantic Ocean.

The Anglo-French Cable.

PARIS, Jan. 20.—A new cable, in the interest of the French Company, to connect England and Brest, has been successfully laid. The shore end at Salcombe, England, was completed last night.

PARIS, Jan. 26.—The new cable which has recently been successfully laid between Salcombe, England, and Brignogan, France, is of the most solid description of deep sea cable, weighing $8\frac{1}{2}$ tons to the mile, and the shore ends 14 tons. Double land wires will shortly be completed, to connect the cable with the land systems of telegraphs in both countries. By this means messages will be transmitted directly from Brest to London, without passing through Paris, as at present. The completion of this new link, which has been much retarded by bad weather and other unfavorable circumstances, will place London and New York in almost direct communication, and the whole route will be under the management and control of the French Cable Co.

Pacific Submarine Cable.

LONDON, Jan. 26.—A submarine cable has been ordered, which will be laid along the Pacific coast of South America, from Panama to Payta, Peru.

The New Washington Line.

It is understood that the new line in course of construction between this city and Washington, D. C., has been completed from Washington to Baltimore. If the present favorable weather continues the work will be pushed forward rapidly between Baltimore and this city.

The New Fire Alarm Telegraph.

The construction of the new Fire Alarm Telegraph has been delayed in consequence of the magnitude of the work. However, below 14th street the poles are set, the wires stretched, and the alarm boxes fixed to the poles. The work at the Central Fire office, 127 Mercer street, is also about completed—the immense batteries, which occupy the whole of the basement, having been prepared for the chemicals; the telegraphic instruments are in position, and all the other numerous appliances will soon be in working order.

The Western Union Telegraph Company again in Trouble.

In the Supreme Court, Trial Term, Part Second, a case in which the Western Union Telegraph Company are the defendants, was on the calendar for hearing to-day. The complainant in the case is Mr. Feist Samuels, of No. 372 Fourth street. The circumstances upon which he grounds his action are as follows:

"In December, 1868, Mr. Samuels, being an extensive cattle dealer, had an agent in Albany. The latter bought for Mr. Samuels a large number of cattle, which he wished to send to New York as soon as possible; for that reason he telegraphed from Albany, by the Western Union line, to Mr. Samuels, stating that the cattle had been purchased by him and would be sent to New York forthwith. The employees of the Western Union Telegraph Company did not forward the despatch to Mr. Samuels. The result was that the latter, in order to meet the demands of his customers, had to buy cattle in New York, for which he gave an exorbitant price—losing, in consequence of the remissness of the company, about \$5,000. The case will probably develop some interesting features. Mr. James M. Smith is counsel for the complainant, and Messrs. Lowry and Soren for the Western Union Telegraph Company."—*Daily News*.

Opposition Telegraph Across the Continent.

The Oakland (Cal.) *Transcript*, in a double headed article, informs its readers that there is now a good chance for an opposition telegraph across the Continent. It says there are two gentlemen, now on their way to California, who have completed arrangements for an opposition line already from Chicago to Promontory, and that they will use the railroad line of the Union Pacific Company. The *Transcript* says that "they desire to make arrangements with the Central Pacific and Western Pacific Companies for the use of their lines from Promontory to San Francisco, and if successful in this, as they no doubt will be, we shall soon have an opposition telegraph line extending across the Continent. These gentlemen are in entire sympathy with the postal telegraph movement. The Central Pacific Company can confer no greater boon upon the people of this coast than to grant the new telegraph company the use of their lines upon reasonable terms."

TELEGRAPHIC BREVITIES.

ADVICES from Omaha, Nebraska, of January 21, state that passengers from the West report that more than forty miles of the telegraph lines, including the railroad and commercial lines, were demolished by the recent storm.

The telegraph line from Yokohama to Yeddo, Japan, is nearly completed. This is the first telegraph line built in Japan, and is exclusively a government affair, and not intended for popular use.

The Lake Superior Mineral Range line has been extended from Rockland to Ontonagon, Mich., with M. A. Powers as operator at Ontonagon.

The Northern Telegraph Company have recently opened a branch office at the Merrimack House, Lowell, Mass. The clerk to the hotel, M. A. S. Nate, has been appointed manager.

(From the Bombay Gazette, Oct. 16.)

The Second Persian Gulf Cable.

It may be remembered that more than a year ago the Government decided to submerge a second telegraph cable in the Persian Gulf, extending from Bushire to Jashk, on the coast of Mekran. At the present moment there is a double line of communication from Kurrachee to Jashk—the one by submarine, the other by aerial telegraph; and from Bushire to England there is the line by Turkey (just now unfortunately interrupted by the Arabs), and a second through Persia and Russia—the organization of which, at Messrs. Siemens's hands, will not, in all probability, be thoroughly carried out until the end of November. The laying, therefore, of the second cable between Jashk and Bushire will complete the duplicate chain of communication between India and Europe, and will relieve the old cable from a weight of traffic already nearly too much for its capabilities.

So far back as July, 1868, the manufacture was commenced in England, under the management of Mr. Latimer Clark, who was engaged to superintend the construction and submersion of the new cable. The general direction of the arrangements was entrusted to Major Champain, assistant to Colonel Goldsmid, the head of the Indo-European Telegraph Department. This is the first cable of importance where the old gutta percha covered core has been discarded, and India rubber, prepared by Mr. Hooper, the well known chemist in Pall Mall, used in its stead. The superior insulating properties of the latter substance have long been recognized, but difficulties in properly preparing it, and numerous other causes, have hitherto prevented its general adoption. The excellent qualities of Hooper's core have, however, been satisfactorily proved by many severe tests. An experimental length has for a long time been laid near Bushire; the new core was also used for the existing Ceylon cable; many miles have been sent out to India for river crossings; and a considerable quantity was purchased and sent out in 1867, for telegraphic purposes, during the Abyssinian campaign. The cable under consideration was covered by Mr. Henley, of North Woolwich, and shipped last winter on board the two fine sailing vessels, the Tweed and the Calcutta. It was at first intended to lay the new line in the spring of the present year; but the whole arrangement had to be altered in January, in consequence of the disastrous collision of the Calcutta near the Lizard, when seventy miles of the cable had to be thrown overboard, and the vessel at last abandoned in a sinking state in the Channel. The captain of the Calcutta and thirty of his crew, including three cable hands, lost their lives; but the ship was eventually picked up and towed into Plymouth by her Majesty's frigate Terrible. The seventy miles of jettisoned cable were grappled and recovered under the immediate supervision of Mr. Webb, Mr. Latimer Clark's assistant, and

after great labor the Calcutta was able to sail again at the end of June, closely followed by the Tweed.

Both ships reached Bombay on the same day, and are now lying off the Apolla Bunder, preparatory to the final start for the Persian Gulf.

It was from the first determined to lay the cable out of sailing vessels in tow of steamers—a plan which involves some risk, and which is never adopted in latitudes where settled weather cannot be counted on. In this instance the vessel actually paying out will be towed by the Dacca, a steamer just chartered for the expedition by the Bombay government. The second vessel will be towed by the Earl Canning, and the Amber Witch has already started for Jashk, to lay the shore ends in advance. The original length of 525 miles of cable shipped has been reduced by ten miles, in consequence of loss in splicing and repairing the seventy miles jettisoned off the Lizard. The operations will commence about the 1st of November, and the cable will be laid up the gulf from Jashk to Bushire, the Tweed first paying out her stock and the Calcutta completing the last half to Bushire. It is confidently expected that the ships will be back in Bombay by the beginning of December, to have their tanks removed and their decks and beams replaced.

The Telegraph in Salvador.

WE are glad to learn that Mr. C. H. Billings, of this city, has succeeded in concluding a contract with the Government of the Republic of Salvador for building a line of telegraph from the port of La Libertad to the city of San Salvador. The length of the line will be 45,000 varas (24 miles), and the material is already ordered from New York, to be here by the 29th inst. On the 20th prox. the work will be commenced, and it is confidently expected will be completed on or about the 1st of April next. We congratulate the Salvadorean Government upon another step in the path of progress in that already fast advancing country, and trust that the undertaking may prove alike profitable both to the Government and the contractor.—*The Panama Mail*.

New Patents.

For the week ending Jan. 25, and each bearing that date.

99,047.—PRINTING TELEGRAPH. Milton F. Adams, Boston, assignor to E. B. Welch, Cambridge, Mass.

Claim.—1. The combination of key-board B, drum C, insulator breaks b, break spring c, train of wheels, with magnet E, escapement G, wheel G, and type wheel L, in the manner and for the purpose substantially as described.

2. The combination of type wheel L with roller R, lever P, cam wheel N, escapement H, and wheel H', and magnet F, in the manner and for the purpose as stated.

3. The combination of the key board B, drum C, insulator breaks b, break spring c, magnet E, escapement G, type wheel L, with roller R, lever P, cam wheel N, escapement H, and magnet F, when arranged in the manner and for the purpose as set forth.

No. 99,273.—PRINTING TELEGRAPH. Samuel S. Laws, New York, assignor to the Gold and Stock Telegraph Company.

Claim.—1. The combination, with the type wheel H, in a telegraphic printing apparatus, of mechanism substantially such as described, for imparting to said wheel a step-by-step motion, in an advance or retrograde direction, as set forth.

2. The endless inking-ribbon, passing between the type and paper, in combination with the type wheel and printing lever of a telegraphic printer, substantially in the manner set forth.

3. Imparting to the endless inking ribbon of a telegraphic printing instrument a feed motion, by gearing from the type wheel shaft, substantially as described.

4. The ink fountain F, in combination with the endless inking ribbon, type wheel and printing lever, of a telegraphic printer, substantially as set forth.

5. The endless inking-ribbon, combined with a cylindrical weight, F, substantially as specified, for maintaining the proper tension on said ribbon, as specified.

6. The arm of the printing lever, which carries the impression roller, made in two parts, connected by a hinge joint, and controlled by a spring and set screw, substantially as and for the purposes described.

7. The serrated drum g¹, ratchet wheel g², and pawls g³, in combination with the printing lever D, and its recoil spring, substantially as and for the purposes set forth.

8. Two magnets, arranged to act, in the manner specified, upon the impression lever, in combination with the type wheel, substantially as specified.

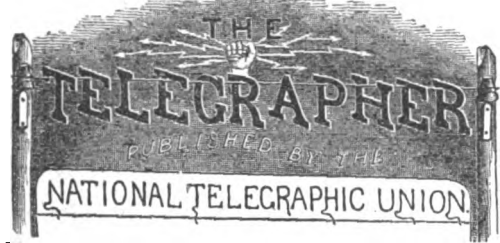
9. The union lever H⁴, operated by an independent electric circuit, in combination with the type wheel or indicating device, actuated by a separate electrical circuit, substantially as and for the purposes described.

10. The arrangement of an armature, acting upon the side of the core of an electro magnet, in addition to the armature acting on the face of said core, substantially as and for the purposes set forth.

11. The electrical circuits, for affecting an advance or retrograde movement of the type wheel, in combination with the separate electrical circuit for effecting the printing, substantially as specified.

12. The electrical circuits, arranged and connected, substantially as specified, for effecting an advance or retrograde movement of the type wheel, and either circuit serving to give the impression when the other circuit is closed, substantially as specified.

13. A type wheel, containing letters, figures and fractions, or fractional signs, to be impressed upon a strip of paper by magnetism, substantially as specified.



SATURDAY, JANUARY 29, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

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 Corres. Sec.....F. L. POPE....Box 6010 P. O., N. Y.

THE OFFICIAL ORGAN AND THE STRIKE.

THE last issue of the official organ of the Western Union Telegraph Company was looked for with much interest, as it was a matter of curiosity to know how it would treat the recent effort of the operators to resist the oppressions attempted by the Western Union Manager on the Pacific Coast towards its employes.

Of course, misrepresentation of the Telegraphers' Protective League, and of the causes which led to the strike, was to be expected, but some of the editorial statements and assertions in this connection are so utterly unwarranted by the facts that we are constrained to notice them. We have no desire to prolong or intensify the bitterness of feeling and the animosity which cannot but result from the unfortunate termination of this initial effort of the League to maintain what it regarded as the just rights of its members, but our duty to the great body of practical telegraphers, whom we represent, requires that their side of the recent unpleasantness be set forth in our columns.

Much stress is laid upon the *oath* by which the members were bound to each other. It is claimed to have been immoral, and, instead of an element of strength, one of weakness to the organization. While the result has shown that those whose pledge of honor would not bind them could not be bound by their oath, yet we fail to see wherein this oath increased the wrongfulness of the effort to combine the telegraphic fraternity for their own protection. Unless it be conceded that combinations of employes for mutual protection are in themselves wrong and immoral, we cannot see wherein this oath made the League amenable to censure. The very existence of a protective organization is based upon an agreement of its members to make common cause with each other for mutual support. This, of course, involves the surrender, in certain contingencies, of their obligations to their employers, and an abandonment temporarily of their service. This, whether done under the stress of an oath or an honorable pledge, amounts to the same thing.

The pretended history of the organization and progress of the League is wrong in almost every particular. If we are correctly informed, it commenced in 1868, and not among operators of the Western Union Company. At first there were two similar organizations commenced, unknown to each other, one at the East and the other at the West. As they progressed they came together, and the result was a consolidation of the two into one organization. The organization, as we are informed, was intended to resist unreasonable exactions of employers, and not to enforce unfair and oppressive exactions. It was organized secretly, because in this way only was it possible to make it permanent or successful. At the proper time the mask of secrecy as to its existence was to be thrown off, and the time when this could be done was believed to be near at hand.

The tenor of the remarks of our official contemporary is

that this organization was designed to make a strike when it should become sufficiently powerful. This we believe to be untrue. As we have been informed, it was designed to prevent the necessity of a strike. If the telegraph employes, or a large proportion of them, were known to have a compact and powerful organization, that fact would have insured compliance with their just demands, and obviated any necessity for unfriendly demonstrations.

The representations that the chief officers of the League desired an opportunity to manifest the power of the League, and were actuated by unfriendly sentiments towards the Western Union Company, are so absurd as only to provoke ridicule from those who know all the facts connected with it. So far from this being the case, no one regarded more regretfully the action of the members of the League in California than these very officers who are represented as swelling with vain-glorious impressions of their power, and anxiety to show how completely the telegraph companies were at their mercy. The strike was *not* ordered from here, and was not anticipated here. When information that it had commenced, and that the Chicago and Cincinnati offices had gone out, was received here, it was too late to stop the movement, and failing to obtain reasonable concessions from the Executive Committee of the company, nothing remained but to back it up with all the power of the League.

Some slight concession, on which to base a suspension of the movement, was earnestly sought, but none could be had. All that was asked was that the Executive Committee would promise to *investigate* the California grievances, and, if any injustice had been done, correct it. As is well known, this was refused. Had it been conceded the strike would have ended on Tuesday.

We have already shown the incorrectness of the company's statements of the condition of affairs in San Francisco. Every additional item of information received from there confirms our opinion that the agents of the company deliberately and intentionally provoked the contest, for the purpose of developing the existence of and destroying the League. There is abundant evidence that false hearted scoundrels who had obtained admission to the League betrayed it, not only in San Francisco but also in Chicago, to the agents of the Western Union Company.

Of course, Mr. RALPH W. POPE comes in for depreciation and denunciation. Mr. POPE was made the Chief Operator of the League by the unsolicited action of its members. In his office he was just and impartial, and sought only to carry out the behests of the order. He is no more to blame for the result than any other member of the League.

It is also asserted, in the paper referred to, that Mr. POPE was in the employ of a company antagonistic to the Western Union, and designed, through the operations of the League, to injure the latter for the benefit of the former. The well known fact that, for the last two years, there has been a business alliance between the two companies, is a sufficient refutation of this slander.

The assertion that the strike was designed to take place in December is as erroneous as most of the other statements in the article under consideration. As we have stated, it was not designed to strike at all, unless, as in this case, the contest was provoked by the company.

The movement has ended disastrously, and the Western Union Company and its organ are of course jubilant over its victory. A premature movement has blasted the expectations of the members of the League, and has left them at the mercy of their employers.

We regret the fact, but hope that eventually good may result from this affair, and that a more cordial agreement may exist hereafter between the company and its employes. It is for the managers of that company to decide whether it is for its advantage to possess the good will and cordial coöperation of its employes, or their hatred and detestation.

Personal.

THE official organ of the Western Union Telegraph Company, in quoting a portion of the remarks made by the Editor of this paper at the Hall of the League, during the recent telegraphers' strike, takes occasion to say—

"Mr. ASHLEY's interests are identified with the success of strikes, his paper being the organ of the dissatisfied everywhere. The strike is largely the result of his influence and advice."

With two or three exceptions we concede the correctness of the remarks of our official cotemporary.

In the first place our personal interests are not identified with strikes. THE TELEGRAPHER is not the organ of the *dissatisfied* everywhere, but the organ of the practical telegraphers of the country, whether dissatisfied or otherwise, and we have not counselled or advised this or any other strike. On the contrary, we have counselled the members of the League to be very careful, and manage, if possible, to avoid a strike. We have advised the telegraphers to resist a war tax, to defray the expenses of the competition between the Western Union and other companies, for which they were not responsible. In this we were right, and retract nothing that we have said.

The Editor of this paper was not even a member of the League, and never saw or knew the character of the obligation assumed by its members until the perjured traitors employed by the Western Union Company betrayed them to its agents, and they were furnished for publication by that company.

The American Compound Wire Co.

THE annual meeting of the American Compound Wire Company was held on Wednesday, January 26th, in this city. The Board of Directors and officers were re-elected and a dividend on the stock was declared. The report of the business of the company for the past year was very encouraging—it having amounted to nearly three times that of the first year, and the orders for the present month already exceed the entire business of the first year. It is noticeable that during the last year the demand has been for wire of larger conductivity than that previously used, and for the present year still greater conductivity is required. This shows progress in the right direction.

Remember Them.

SOME five or six young ladies, who left the Western Union office at 145 Broadway, at the time of the strike, and who are now proscribed by the *amiable* manageress of the ladies' department, are in want of situations. We hope that they may be kindly remembered by all friends of the telegraphers, and efforts made to secure them employment without unnecessary delay. The address of these ladies may be had on application to the editor of this paper.

Return of Gen. Smith.

GEN. W. F. SMITH, President of the International Ocean Tel. Co., who has been in Europe for some months on business connected with the Panama and West Indies telegraph, returned on the steamer Russia, from Liverpool, on Tuesday last.

Telegraphers' Ball, Chicago.

We have to acknowledge the receipt of an invitation to participate in the third annual ball of the Chicago telegraph operators, which came off at Crosby's Music Hall, in that city on Thursday evening last. We have no doubt but that it was a highly successful affair.

Notice to Subscribers.

As the general disruption of telegraphic arrangements, consequent upon the recent "onpleasantness" between the Western Union Company and its employes, may have caused some of our subscribers to miss their papers during the last two or three weeks, we will, upon notification in such cases, forward duplicates.

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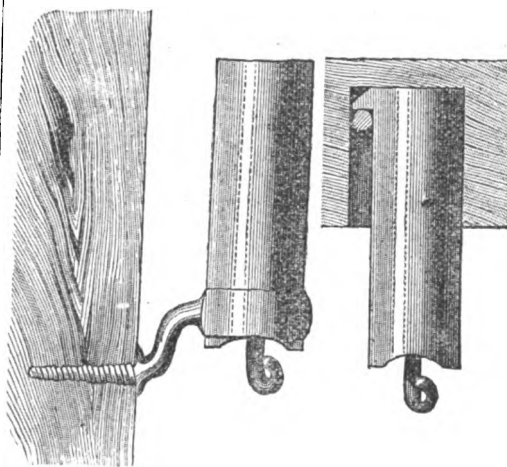
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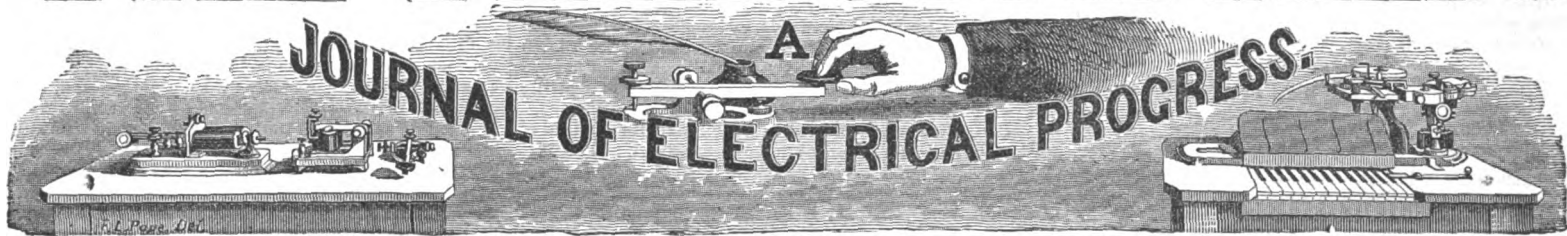
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THE TELEGRAPHER.



Vol. VI.—No. 24.

New York, Saturday, February 5, 1870.

Whole No. 186.

[Written for THE TELEGRAPHER.]

THE LESSON OF THE STRIKE.

BY JUSTITIA.

THE contest between the Western Union Telegraph Company and its employes, which signalized the opening of the year 1870, is destined to become historical in the annals of American telegraphic history. Now that the battle—for the present at least—has been decided, and the smoke of the conflict has in some measure cleared away, it is worth while to investigate, as impartially as may be, the train of circumstances which led to this somewhat unexpected and startling movement, and to glance at its possible results.

Every telegraph man who was formerly engaged in or familiar with the service of the American Company, which a few years ago controlled the lines throughout the Eastern and Southern portions of the United States, will agree with me when I say that no organization, of the nature of a secret protective league among operators, could by any possibility have existed under the administration of that company; yet we find that under the management of its successor, the Western Union, such an organization not only became a possibility but an accomplished fact. It is evident to any rational mind that an association like the Telegraphers' Protective League, embracing nearly two thousand men and women, of more than ordinary intelligence, could not have been brought into existence without some adequate cause. What then is the cause which has brought about the state of things under consideration? Let us examine the facts.

The leading characteristic in the administration of the American Company, and its policy towards its employes, was justice. Col. E. S. Sanford, and Gen. Marshall Leferts, the former of whom was president, and the latter chief executive officer of that company, were gentlemen who believed that its true policy towards its employes was even handed justice to all, even the humblest and poorest, and they did not content themselves merely with empty professions, but they carried out their ideas in practice. Any employe of that company—no matter how obscure his position—who suffered any injustice at the hands of his immediate superior, could appeal to a higher authority, with a reasonable assurance that his case would be looked into and set right. Individual instances of hardship and of grievance doubtless did occur, which may have been overlooked, but such was not the fault of the management of the company. The general orders issued from the executive office were of a character calculated to inspire every employe with a determination to give the company his most faithful services, and to cause him to feel that his efforts would neither be unappreciated or unrewarded, and that in advancing the interests of his employers he was at the same time benefiting himself. The result of this policy was eminently satisfactory, both to the employes and the stockholders, and a murmur of dissatisfaction was rarely heard. The same kindly, just and considerate policy was pursued upon the New York and Buffalo and National lines, under the superintendence of such men as James D. Reid and David Brooks, and the results were not less satisfactory.

In 1866 these different companies had all been absorbed by the Western Union Company, and a radically different system was at once inaugurated, which, in the short space of four years, has not only reduced the value of the company's stock nearly one half, but what is far worse, has arrayed the greater portion of its six thousand employes, first in secret, and finally in open hostility against it. A man was selected for the important post of General Superintendent of the Eastern Division, who, through some adventitious consideration of circumstances, had rapidly risen from obscurity into an important position under the Government during the war. He at once undertook to manage the affairs of his de-

partment in the harsh, dictatorial, and overbearing manner which is considered by small minds a necessary concomitant of strict military discipline. In time of war, when states and nations are in danger, the severity and injustice of military rule must be tolerated sometimes as a necessary evil, for the sake of avoiding others far more disastrous; but in time of peace such official despotism tends to bring about rebellions and revolutions, and this case has not proved an exception.

It was not long before the fruits of the despotic policy began to manifest themselves. The system of promotion according to merit was summarily abolished, thus taking away the principal incentive of the best class of employes to perform their duties with alacrity and thoroughness. It soon came to be understood that those only could expect promotion who were willing "to crook the pregnant hinges of the knee, that thrift may follow fawning." From any injustice or oppression on the part of these minor officials the operator or other employe had no redress. All complaints must be referred through the various grades of officials, and if the sufferer was fortunate enough to escape instant discharge, for his temerity in daring to remonstrate against ill treatment, his complaint remained unnoticed or at least unattended to. The policy of the management seemed to be to sustain the minor officials in all cases, right or wrong, as long as the revenues of the company were not directly diminished thereby. Judging from recent events, a similar policy has been in force on the Pacific coast. It is but just to state that there have been notable and honorable exceptions to the class of sub-officials referred to, some of which are to be found in the New York office.

In order to protect themselves against these petty but innumerable acts of tyranny and injustice, the operators of the Western Union Company at length organized a secret association, which, although small at first, increased with more and more rapidity as the condition of the operators became more disagreeable and unendurable. It was not, as has been frequently charged, an organization for the purpose of securing increased compensation for its members. On the contrary, it was considered by all, or nearly all concerned in it, that the salaries paid by the Western Union Company, though seldom excessively liberal, were, in most cases, a fair and satisfactory equivalent for the labor performed. Comparatively few complaints were heard upon this score; but the operators felt that they were men, and they wished to be treated like rational beings, and not like galley slaves. They proposed, when their organization was strong enough, to secure a respectful hearing—to fearlessly lay their grievances before the president of the company, who bears the reputation of being a just and honorable man, and to insist, if need be, on the inauguration of a policy which should secure to the humblest among them a fair hearing in case a difficulty should arise. They proposed to secure simple justice for themselves, nothing more, nothing less. Under former companies they did not need to organize a Protective League for this purpose. A corporation managed upon the principle of the American Company had nothing to fear from secret organizations and strikes.

But a conflict between the Telegraphers' Protective League and the Western Union Company was precipitated by ill considered and hasty action on both sides. An act of gross injustice was attempted by the General Agent and Superintendent of the California District of the Western Union Company, by reducing the salaries of four operators in San Francisco, and making the reduction date back *three weeks previous to the time of notification*. This, by the way, has been done in other cases by the secretary of the company in New York, and is a specimen of "the same just and liberal spirit which this company has always manifested in its dealings with its employes"—to use his own words in his recent commu-

nication to the strikers! The California operators remonstrated, and the reduction was ordered postponed till the following month. A petition to have the salaries continued as at first is met by the instant discharge of two of the men. Ten more men are discharged from another office for sympathizing with them and proposing to assist them.

It is not remarkable that the California operators revolted under such treatment. They would have been less than men if they had not resented it.

This was followed by a fatal blunder on the part of the operators in Chicago and Cincinnati. With rash and hot headed impetuosity they quit their instruments, without waiting for explanations or negotiations, and without pausing for instructions from the chief whom they had themselves chosen and pledged themselves to obey. Had they been content to await the progress of events, the California difficulty might undoubtedly have been adjusted at New York, the headquarters of the League and the Western Union Company. When peaceful negotiations had failed, and not until then, were they justifiable in inaugurating a conflict which must necessarily result in more or less inconvenience and injury to innocent parties. But this mistake having been made, and the company refusing to compromise, or even to investigate the original cause of the difficulty, there remained no alternative to the League between abandoning their comrades to their fate and fighting the battle through. The operators chose the latter and were eventually defeated.

It will be noticed, by referring to the correspondence heretofore published, that in the first message of Mumford, the California General Agent, to Secretary O. H. Palmer, he asserts, explicitly and positively, "I have reduced no salaries here or anywhere else, and *have had no intention of doing so*;" yet not only the evidence of all the San Francisco operators, but of his own subsequent communications, shows that he had intended to reduce salaries, and had, in fact, actually done so. Yet, in spite of this obvious misstatement of the true facts in the case, the officers of the company, in accordance with their usual policy, determined to sustain him, right or wrong, and the result was the difficulty which has lately occupied so large a share of the public attention.

It is yet too early to predict the eventual result of this affair, but it may safely be assumed that if the Western Union officers, from this time forward, inaugurate a policy of strict and impartial justice towards their employes, and are careful that promotions, when made, shall be rewards for faithful and meritorious service, they will hereafter have little to fear from strikes and protective associations. But if, on the contrary, the traditional policy be adhered to in the future, it will be idle for the company to try to guard against other and still more formidable combinations among their employes, by any of the various means that they are at the present time industriously engaged in devising and carrying out. The operators came very near success in the present instance. If they ever have occasion to make another move of the sort, it is safe to assume that the mistakes of the last campaign will be carefully guarded against.

Telegraph Extension.

We understand that the poles are on the way here for constructing the telegraph line to Ottawa, and that the same will be extended to Garnet by the time the railroad reaches that town. Work will be commenced as soon as practicable, and the line be put in operation. This is good news for the people along the line of the Galveston road. Telegraphic communication with the towns down that way is something that has been long needed, and we are glad to learn that the work is soon to be accomplished.—*Lawrence (Kansas) Journal*.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., Feb. 3d.

TO THE EDITOR OF THE TELEGRAPHER.

TELEGRAPH matters have advanced somewhat in Congress since my last communication. On Thursday of last week Speaker Blaine appointed the Special Committee on the Postal Telegraph ordered by the House, on Mr. Washburne's motion, as follows: Messrs. C. C. Washburne, Chairman; Lawrence, Dawes, Davis, Palmer, Woodward and Beck.

On Monday last a motion was made that this committee be ordered to investigate the whole subject of telegraphing in the United States, and that it have power to send for persons and papers. Objection was made, and a motion to suspend the rules was negatived by a large majority, and the motion went over, under the rules. The indications are that the House will not sanction such an investigation as Mr. Washburne desires. It is probable that at some time a majority of the committee may make a report partially favoring the project, but there is no probability that the House will, in its present economical temper, authorize the expenditure of the thirty millions of dollars that will be required for the purpose of purchasing existing telegraph property and business, and establishing a postal telegraph system. Mr. Dawes, who is on the committee, has achieved a national reputation for his efforts against wasteful and unnecessary appropriations, and for economy in the administration of the government.

On Monday, in the Senate, Mr. Ramsay, from the Committee on Post-offices and Post-roads, reported back, with amendments, the bill to establish a postal telegraph system and to incorporate a Postal Telegraph Company. With few exceptions the amendments are merely verbal, and the summary of its provisions, as published on the 21st inst., need to be corrected only in the following particulars: The company is required to provide lines of telegraph to every city and village where telegraph stations are now maintained, for the transmission of messages for the public, and to all places which have a population of 3,000 inhabitants. A person performing the duties of a Commissioner of Telegraphs shall be styled "Fourth Assistant Postmaster General." Any postmaster may act as an operator, with the approval of the Postmaster General. The company may purchase any existing lines of telegraph which may be offered to it prior to January 1, 1871.

This bill was accompanied by a report strongly favoring the proposed system. (An abstract of this report is published in another column.)

There is probably little doubt but that the Senate will eventually pass this bill, with the amendments, at some time during the session, but there is no probability of its meeting with a similar result in the House.

The postal telegraph ring are very busy here, and are highly elated at the speedy and complete endorsement of their project by the Senate Post-office Committee. It may, however, yet be defeated, even in the Senate, and certainly will not be allowed to pass without earnest opposition from those whose property and interests it is intended to destroy.

It is generally believed that important and radical changes in the whole telegraph system are likely to be made within the next two years, and that any definite Congressional action, at this time, would be likely to commit the government to expenditures for an old and comparatively inefficient system of telegraph, which may soon become obsolete and valueless. CAPITOL.

Automatic Telegraph Process.

NEW YORK, Jan. 31st.

TO THE EDITOR OF THE TELEGRAPHER.

MR. C. WESTBROOK, in his communication upon Automatic Telegraphy, in the last number of THE TELEGRAPHER, appears to have been unnecessarily excited in relation to certain claims made on behalf of the Little Automatic Telegraph System—and as I had something to do with the publication which has so seriously disturbed Mr. Westbrook, I ask the favor of a small space in your journal to say a few words in reply.

Mr. Little and friends have cheerfully awarded to Bain the credit of being the first to conceive of a "fast" or automatic process of telegraphing—but whilst Bain's process was ingenious it was not practical; and the difference (which Mr. Westbrook wishes to have stated) between Bain and Little is precisely the same as between

Little and Westbrook, to wit: Little's System of Automatic Telegraphy is thoroughly practical, much more correct and reliable, and ten to twenty times more rapid than the Morse hand-key system—whilst the Bain and the Westbrook (or more properly, Morse) Automatic Systems are utterly impracticable for regular business, and therefore are valueless—all of which must be well known to Mr. Westbrook, as he has tried in vain for several years to prove that his system possessed any real merits over the regular Morse hand-key.

Prof. Morse and Mr. Westbrook's friend Reid, editor of the *Journal of the Telegraph*, have recently stripped Mr. W. of the lean credit of his assumed invention, by proving that Prof. Morse was the real inventor of the embossing process, which, twenty years subsequently, Mr. W. lays claim to as original with himself. I feel quite sure that no telegraph company will ever infringe any of Mr. Westbrook's real or assumed rights.

As we are now so near to a full practical test of the Little Automatic System of Telegraphy, I forbear to say anything more in relation to it, except to reassert, with increased positiveness, that it is the only thoroughly practical system of fast automatic telegraphy yet devised, and to express my confident belief that it is destined, in the near future, to work an entire revolution in the telegraph and postal business of the country.

D. H. CRAIG.

The Late Strike in Cincinnati.

CINCINNATI, January 19th.

TO THE EDITOR OF THE TELEGRAPHER.

THE strike of the Western Union Telegraph Company's operators is over, the operators defeated, and the Telegraphers' Protective League, if not effectually destroyed, at least badly crippled. On this question I, one of the prominent strikers, an old operator, and a frequent contributor to your columns, having gone into other business, desire to say a few words from a disinterested point of view. The T. P. L. was considered by all the Trades Unions in this city to be the strongest Union of the kind in the country, yet it was defeated—and why? Simply because of cowardice in our ranks—which has always existed to a greater extent among telegraphers than any other class of people in the country. And where does this cowardice exist? Among those who have been least abused? No. But among the very men who have been the worst abused. Those in this city, at all events, who received the smallest salaries, and who are kept on them from year to year, were the very first to weaken, while those who were getting the greatest salaries were doing their utmost to get these cowards their just dues. At the time the strike culminated the League was strong enough to have brought the Western Union monopoly to terms inside of a month, but ere scarcely a day had passed, Milwaukee led the deserters from our ranks, and salaries in that city were smaller than in any large city in the West. Eternal shame on her! Then followed the traitor Philadelphians—all honor, however, to the gallant eleven there—which was immediately followed by five operators here. It was men like these that killed the League and nought else. At no time since the war has telegraphing been a very desirable profession, and matters now are a great deal worse than ever. The strikers who have returned to work are, of course, spotted, and will be ousted as soon as possible. This strike has caused a great majority of the very best operators in the country to quit the business, and my advice to those who have spent years at the key, and who are best able to judge how they have been treated by an overbearing monopoly, is to seek other fields of labor, where their talents will be better appreciated, for there is not in the country to-day a man with capacity enough to become a proficient in the telegraph business who cannot turn his brain to almost anything else, and make more money at it. The profession I leave in disgust, but my many friends with regret. The motto of the gallant strikers who are now at work should be, "Honor the brave, and confusion to cowards and traitors." THE TELEGRAPHER should publish the name of every man who went back on his oath, and these names should be furnished by the Secretary of every Circuit in the country. LEW. OGDEN.

Washburne's Postal Telegraph.

WASHINGTON, D. C., Jan. 25.

TO THE EDITOR OF THE TELEGRAPHER.

AT a meeting of telegraphers here, some time since, it was unanimously

"Resolved, That it is for the interest of the telegraphers of this country that Mr. C. C. Washburne's bill, about to be presented to Congress, creating a postal telegraph, should pass," &c., &c.

Now, as THE TELEGRAPHER treats of subjects of interest to its owners and patrons, the operators, and is supposed to represent the side of these subjects which are

really of interest to them, and as it has lately expressed itself unmistakably against Mr. Washburne's bill in an editorial, and weekly in the letters of "Capitol," I am at a loss to make the "sense of the Washington operators" and the action of THE TELEGRAPHER accord harmoniously.

I am an old and constant subscriber, and, as a member and ex-officer of the old N. T. U., a part owner of THE TELEGRAPHER, and have with, I am assured, a large per cent. of the telegraphers here, wondered why you opposed Washburne's bill; therefore, this inquiry to know why it is not to our interest to have it become a law. Everybody opposed former bills on the subject, as until this one they have tended more toward our injury than good. But I consider this a horse of entirely another color, and am prepared to defend my opinion by any explanation necessary; at the same time I am open to conviction that it is not to our interest, but I must have better argument than the mere fact of one man in his letters saying it is not. HYACINTHE.

A Model Railroad Telegraph.

T. P. & W. RY., Jan., 8th.

TO THE EDITOR OF THE TELEGRAPHER.

THINGS are still dull here. The "strike" has not affected us at all. Most of the men on this line sympathize with the strikers, but a few "plugs," who were "subbing" for some of our men, "scouted" for Chicago, to fill the places of the strikers, as \$70 or \$80 per month and "free lunch" every day seemed ill in their eyes; I understand that several of them are ill through excessive work, but of course the Western Union Company will indemnify them in their usually liberal manner, which will be to "hoist" them just as soon as they can get men who are qualified to do the business.

We boast of having the best working wire in this section of the country. During the very worst weather, when all other wires are "soaked out," we work from Peoria to the Indiana State Line without the least difficulty. All joints are soldered, and consequently the resistance is greatly lessened. Our repairer, Mr. George Paramore, has decidedly a good method for testing the resistance of a doubtful joint. His mode of operating is this: He scrapes the wire bright on each side of the joint and then insulates himself well from the ground, and puts a finger (wet) on each bright spot, and then he is able to judge of the amount of resistance in it by the strength of the shocks he receives. He takes great pride in his work, and consequently things are ship-shape. We have only two paper men amongst us but they are A 1.

Here's a "bull" which should not be left to die alone, and of which the receiver is clearly entitled to the hide.

A watchman on a distillery that was seized telegraphed the Collector, and which reached him thusly:

Hon. J. C. Wilson, Collector, Ch.,

"Send man out immediately. I must have some slop."

"John Saunders."

Of course he wanted "sleep." That operator has since taken a striker's place. More anon. R. E. PEATER.

The Telegraph in Central and South America.

PANAMA, January 14th.

TO THE EDITOR OF THE TELEGRAPHER.

A LONG time has elapsed since my last letter to you, in which I promised to keep your readers posted in telegraphic matters in this part of the world. There is not very much of general interest to the telegraphic fraternity transpiring here, but I will endeavor to state briefly the state of the telegraph, and the prospects for telegraphers in South America.

By nearly every steamer from New York I receive letters from operators in the States, inquiring what are the prospects for first class operators in South America. I have received many of these letters, and finding it difficult to reply to each singly, I avail myself of the columns of THE TELEGRAPHER, which I know all first class operators read, to answer my numerous correspondents.

If they mean the Isthmus when they say "South America," I say there are no prospects at all. This company employs three operators only, and when one of these leave they have others ready to leave New York by the first steamer. "Outsiders" will find it very hard to get a "site." As for "South America," they do not use the Morse alphabet there, only the characters, as the readers of THE TELEGRAPHER already know—it having been so stated, some year and a half ago, in a letter from Mr. Dinegro, of the National Telegraph of Peru.

I have resigned my position as telegraph operator at Panama, to take effect 1st of February next, to go into "construction business." I have just made a contract with the Government of the Republic of Salvador to build them a line of telegraph from the port of La Libertad to the capital, San Salvador, a distance of 45,000

varas, or twenty-three miles and a half, Morse system. The goods have already been ordered from New York, to arrive here on the steamer of the 29th of January.

The President of Salvador assures me that, upon the completion of this short line, and its good qualities proven, he will give me other contracts.

Telegraphs in Costa Rica are at a very low ebb. A Mr. Reynolds, supposed to be a "Yank," built a line of telegraph from Punta Arenas to San José, the capital, a distance of thirty leagues. It proved to be a complete failure, as he bought secondhand material. The government have, however, taken it off his hands and entirely rebuilt it. Their system is that of Morse, and they claim to use the Morse alphabet; but if it is the Morse alphabet I greatly pity Mr. Morse.

While in Punta Arenas I entered the telegraph office, to send a message to San José. I told them I was an operator. I took a seat at the instrument and called the office of M. S. When I finished calling he answered "O. K., O. K." I then tried to send him my message, but failed. (They are all paper operators.) The operator at M. S. then asked, "Who is that who writes so very badly?" I concluded I was not fully appreciated and left. It takes them fifteen minutes to call, send a message of ten words, and get an O. K.! Whew! Where's your "lightnin'?"

Enclosed please find a remittance of \$10, for which you will please send copies of THE TELEGRAPHER for one year to the addresses on the enclosed card.

JOSH.

Self-Closing Keys.

NEW YORK, January 28th.

TO THE EDITOR OF THE TELEGRAPHER.

YOUR Peru correspondent evidently has a mistaken idea of Mr. Frey's Self-Closing Key. The key by no means "tends to alter the usual advantage of the register as well as the sound system of reading." The key is manipulated on an open circuit, *precisely* and in the *same* manner as the keys now in use. By manipulating on an open circuit the circuit is of course closed by the back stroke of the key, but by simply changing the points of the receiving magnet the sounder is read by the down stroke, as usual.

L., EX-OPER.

PERSONALS.

Mr. JOHN B. AUSTIN, formerly of Erie, Pa., has accepted a situation with the Western Union Company at Washington, D. C.

Mr. J. J. POWERS, formerly of the Louisville, Ky., Western Union office, has accepted a position with the Pacific and Atlantic Company, at Cincinnati, Ohio.

Mr. GEORGE E. HUNTINGTON has accepted the position of Manager of the Western Union Office at Saginaw City, Mich.

Mr. J. B. DESRAYAUX takes charge of the Liberty, Texas, office of the Western Union Company, in place of Mr. T. M. COLLINS, who goes to Houston, Texas.

Mr. S. B. CURTIS has been transferred from the Springfield, Mass., to the Hartford, Conn., office of the Western Union Company.

Mr. J. T. HANFORD has resigned his position as Manager of the P. and A. telegraph office at Davenport, Iowa, and returned East to recruit.

THE TELEGRAPH.

(By Atlantic Cable.)

No more Monopoly in Cables.

PARIS, Jan. 31.—The journals of to-day state that the French Minister of the Interior, in reply to a demand of an English company for the privilege of laying a cable from Algiers to France, replied in effect that hereafter all monopoly in telegraphic cables would be abolished, and that even private parties were at liberty to lay cables.

The India Telegraph.—Great Eastern.

LONDON, Jan. 31.—The Overland Telegraph to India is in working order again, and messages of to-day's date have been exchanged between London and Bombay.

A despatch announces the arrival of the steamship Great Eastern at Bombay.

Consolidation of the Atlantic Cable Company.

LONDON, Feb. 1.—The shareholders of the Anglo-American Company held a meeting yesterday, to consider the scheme for amalgamation with the French Cable Company, projected some time ago. A majority of the 3,347 votes was cast in favor of the proposed amalgamation with the French Cable Company.

The Dominion Telegraph Company.

THE annual meeting of the Dominion Telegraph Company, of Canada, was held at Toronto, January 11th.

In their second annual report the directors state "that numerous tenders were sent in, in reply to the advertisement of the company for the extension of their lines east and west, but owing to the lateness of the season it was deemed advisable to limit the work to the eastern section. The line to Whitby and Oshawa was placed under contract and completed, when further operations were interrupted by the approach of winter. It may not be out of place that the directors, under whom the earlier part of the work had been undertaken, should place before the stockholders the order in which, in the interests of the public, and, as a natural sequence of the company, they thought the work should be proceeded with. The extension of the line to Montreal and Ottawa they considered to be of primary importance; next in order the extension westward to London, Windsor and Sarnia, with a loop through Galt, Guelph, and their surroundings; then from Toronto to Barrie, Port Hope and Peterboro', to be followed with such further extensions as the importance and commercial value of the several localities to be reached would justify.

"That the difficulties attendant on the conception of every new enterprise, and in the present state of no ordinary magnitude, have been successfully combated, the directors are sanguine enough to believe, and they resign their trust in perfect confidence that those to whom the future management of the enterprise shall be committed will carry on the work to a prosperous issue, and justify, to the fullest extent the expectations of those who have embarked in it, establishing it to be a sound, legitimate, and successful enterprise."

The Chairman, in reply to a question, stated that in roughly estimating the distance between Oshawa and Ottawa via Prescott at about 300 miles, it would take some \$30,000 in cash to complete the line; and he believed it could be constructed by the first of July next. Mr. Colby, the contractor, who had built the extension to Oshawa, had no hesitation in saying that he could undertake to have the line in good working order to Ottawa by that time.

The following Board of Directors was elected for the ensuing year:

Hon. J. McMurich, A. R. McMaster, L. Moffatt, J. Michie, Hon. W. Cayley, of Toronto; J. I. Mackenzie, A. Copp, of Hamilton; S. Nelson, of St. Catharines; T. N. Gibbs, M. P., Oshawa.

At a subsequent meeting of the directors, held on the 20th January, the following gentlemen were elected officers for the ensuing year:

Hon. J. McMurich, President; J. I. Mackenzie, Vice-President; James Michie, Treasurer. Hon. J. H. Cameron, Consulting Counsel; Hon. M. C. Cameron, Solicitor; *ex-officio* members of the Board. H. Jno. Colles, Secretary.

Election of California State Telegraph Company.

THE stockholders of the California State Telegraph Company held their annual meeting yesterday, and elected the following Board of Officers: President, Geo. H. Mumford; Vice-President, H. H. Haight; Secretary and Treasurer, George S. Ladd; General Superintendent, James Gamble. Directors—Geo. H. Mumford, H. H. Haight, W. C. Ralston, F. MacCrellish, C. E. McLane, James Gamble, George S. Ladd.

Little's Automatic Telegraph Process.

MR. GEORGE LITTLE has just secured patents in Great Britain, France and Belgium, for his *self-acting* mathematical composing apparatus. By Mr. Little's invention (which dispenses altogether with wheel-gearing) the paper strip is carried forward, embossed or perforated, and simultaneously spaced with precision, and, by a recent improvement, as fast as it is possible to use the stylus on an ivory or ebonite tablet in connection therewith, the tablet being the size of one half a sheet of small note paper, and struck up at one operation by a steel dye, in such a form as to enable the operator, by one movement, to complete each letter, together with its proper spacing.

Forms for Telegraphic Messages.

THE British post-office authorities have prepared for the use of the public forms for telegraphic messages, to be used when the whole system of inland telegraphs is acquired by the government. The form is very simple and complete, and differs in one or two important respects from those hitherto employed by the companies—the novelties, it may be added, being decided improvements. The principal of these refers to the arrangement of the words that make up the message. A separate space in lines is allotted to each word, and the corres-

ponding charge is printed clearly on the margin, so that the sender can see at a glance how much he has to pay, and the receiving clerk need be at no trouble in calculating how much he has to charge. Each of the forms thus divided into spaces is prepared for a message of fifty words, which is assumed to be sufficient in the great majority of instances. In the right hand upper corner of the page a blank is left for the stamps, which will probably be almost exclusively used to cover the charges of transmission. Attached to the form are directions for the guidance of the sender, with a tariff of charges, and full information as to the arrangements for portage.

An Elegant Testimonial.

WE learn, from the *Crawford County* (Ohio) *Forum*, that on Christmas morning, the operators at Crestline, Ohio, presented to the accomplished wife of H. W. Wynkoop, Esq., manager of the telegraph office, a complete silver tea set, elaborately finished, chased and engraved, as a testimonial of respect for their worthy chief. The set was composed of six pieces, and the single letter "W" was engraved in old English text on each piece. The largest piece, on its reverse side, bears the following inscription, "Christmas, 1869," engraved in the same letter as the rest.

Subsequently, and in honor of the splendid gift, Mrs. Wynkoop gave an evening party and supper to the donors. The elite and beauty of the town were present, and all went

"Merry as a marriage bell."

The *Forum* says, in concluding its account of the affair:

"It affords us sincere pleasure to unite with the operators at Crestline in awarding Mr. Wynkoop the highest meed of credit as a skillful telegraphist and high-toned honorable gentleman. This compliment is unsolicited, and, as we believe, justly deserved."

New Patents.

For the week ending Jan. 25, and each bearing that date.

No. 99,145.—MANUFACTURE OF INSULATORS FOR TELEGRAPH POLES. Homer Brooke, New York, N. Y.

Claim.—1. The process of manufacturing glass insulators, having screw threads in their interior, by first forming them and making the cavity or hole therein by one press, *c*, and then transferring them, before setting and while in the mould, to or under a second press, *D*, that produces the screw thread in their interior, substantially as specified.

2. The screw press, *D*, having its plunger fitted or provided with a form-retainer, *E*, and screw tap, *c*, for operation on the heated glass in the mould, after the same has been shaped or formed, externally and internally, by previous pressure, essentially as herein set forth.

No. 99,192.—BATTERIES FOR ELECTROTYPING. Peter S. Hoe, New York, N. Y.

Claim.—1. As a new and improved article of manufacture, a battery constructed of glass, substantially in the manner and for the purposes set forth and specified.

2. The combination, with a battery constructed of glass, of the case, lined with paraffine or similar material, substantially as described, and for the purposes specified.

No. 99,233.—ELECTRO-MAGNETIC RAILROAD SWITCH ALARM. Theodore A. B. Putnam, New York, N. Y.

Claim.—The spring A, bar and arm D P, and conductor H, in combination with the battery B, wire V, electro-magnet, armature and alarm, for the purposes as herein described and set forth.

REISSUES.

No. 3,810.—PRINTING TELEGRAPH. The Gold and Stock Telegraph Company, New York, assignees of Edward A. Calahan, Brooklyn, N. Y.

Claim.—1. A type wheel, receiving its motion from a magnet in one main circuit, and a magnet in a second main circuit for giving the impression, in combination with means for moving the paper by the reverse movement of the armature of the magnet of the second main circuit, substantially as set forth.

2. Two or more type wheels, moving independently and controlled by magnetism, and arranged so as to print jointly or separately upon one strip of paper in two or more lines, substantially as specified.

3. The combination of the type wheels *k* and *l*, magnets *f* and *i*, with the magnet *c* and impression roller *n*, or its equivalent, substantially as set forth.

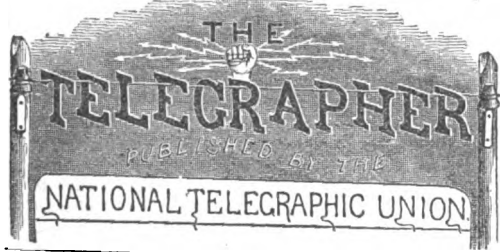
4. The reverse ratchet wheel *q*, and stop or pawl *r*, in combination with the ratchet wheel *p*, and pawl *s*, for moving and holding the type or character wheel, substantially as set forth.

5. The stop pawl *s*, in combination with the armature lever *n*, type wheel *l*, ratchet wheel *q*, and pawl *r*, for adjusting or holding the type wheel in position while the impression is being made, substantially as specified.

No. 3,812.—PRINTING TELEGRAPH. Gold and Stock Telegraph Company New York, N. Y., assignees, by mesne assignments, of Henry N. Baker.

Claim.—1. In a telegraph printer, a magnet for producing or controlling the impressions actuated by electrical impulses, and situated in a main circuit, distinct from and independent of the electrical impulses and circuit which control the movements of the type wheel, so that the impressions can be taken on the paper, independently of any other operation, substantially as set forth.

2. A roller, actuated by a weight or spring, for feeding the paper, in combination with a type wheel, actuated or controlled by a magnet, in one main circuit, and the impression mechanism, substantially as specified, actuated by a magnet in another main circuit, and liberating the mechanism that feeds the paper, substantially as set forth.



SATURDAY, FEBRUARY 5, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

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 Vice-President.....W. O. LEWIS....New York.
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 Corres. Sec.....F. L. POPE.....Box 6010 P. O., N. Y.

THE POSTAL TELEGRAPH.

We print in this paper a letter from a Washington correspondent, who favors the postal telegraphic project of Mr. C. C. WASHBURN, and who cannot understand the course of *THE TELEGRAPHER* in opposing that and similar schemes. We had supposed that any reader of this paper could not fail to understand the reasons which have led us, in the interests of the profession and the public, to oppose earnestly any government management of the telegraph. In fact, we have written and published so much on this subject that we have feared our readers would be weary of the matter, and impatient that so much space should be devoted to it.

We are also aware that the view which we have taken of the postal telegraph schemes has not been in agreement with that of many telegraphers. This is more especially the case with those who are located at the national capital, where the government overshadows and absorbs everything. Of course, under these circumstances, the sense of the Washington operators, as expressed in the resolution quoted in our correspondent's letter, and the action of *THE TELEGRAPHER*, do not "accord harmoniously."

Although we are always inclined to give a respectful hearing to suggestions from telegraphers, and, when convinced of their correctness, adopt them, we have not sought to make the paper "accord harmoniously" with the sentiments of operators, either at Washington or any other locality. While the paper is under its present editorial charge it will be conducted as shall appear to us most advantageous for the whole telegraphic fraternity. If the course of the paper is not satisfactory, it is competent for the Executive Committee of the National Telegraphic Union to make a change at any time.

We will briefly answer our correspondent's inquiry why, in our opinion, it is not for the interest of the practical telegraphers that Mr. WASHBURN's bill should become a law.

The bill creates a perfect and complete monopoly in the telegraph business of the country. There will be no employment for telegraphers outside of the government lines. There will, therefore, be no competition for their services. They must take situations at such salaries as the government may see fit to allow. The experience of the post-office clerk's of the country, the hardest worked and worst paid employes of the government, is evidence of what telegraphers would have to expect. There lot is, however, better than would be that of the operators if the lines should pass under the government control.

Again, under government management there would be no responsibility attached to the business. No damages could be recovered for delays or blunders consequent upon carelessness or incompetence of the telegraph employes. As a consequence of this, an inferior class of operators would be employed, in order to reduce expenses. There would be but few first class men retained, and those only

in the large cities and on the through circuits. These might possibly be paid as good salaries as at present, but the average compensation would be reduced instead of increased.

Whatever the original provisions of the bill might be, the telegraph, under government management, would necessarily become a political institution. It may be intended to guard against this, but it is inevitable. Ours is a government of politicians, and everything, including the telegraph, must bend to political necessities. Suppose a vacancy to occur, for instance, in the New York office. Two candidates apply—one, of the politics of the dominant party, and the other, of the opposition. Is our correspondent, even, simple enough to suppose that the opposition candidate would have any chance for success, though better qualified for the situation than his competitor? Telegraphers will of necessity become politicians, and their fortunes will rise and sink with that of their party. It will demoralize the service, render it less remunerative to operators, and in our opinion no practical telegrapher, who carefully and intelligently examines both sides of the postal telegraph question, can decide in favor of a government telegraph monopoly.

We know that the telegraphers are smarting under their recent defeat by the Western Union Company, and that the humiliating and degrading conditions to which many of them have been obliged to assent, in order to obtain employment, make them willing that any project should succeed which will drive that company from existence. While they have good ground for any sentiments of indignation against those who now take advantage of their necessities to humiliate them, yet the remedy they favor is not as effective as they suppose. In any event the stockholders of the Western Union Company will be paid, not merely the cash value of their line property, but also for their business, and the very men under whose tyranny telegraphers now suffer will administer the postal telegraph, if adopted. The evils and humiliations which are now endured will in due time be remedied and avenged, without the intervention of the postal telegraph.

We have not gone into a critical examination of Mr. WASHBURN's bill in this article, for want of space and time. It is as crude and incomplete as any of its predecessors, and we think has about as much chance of success before Congress and the people.

Modern Practice of the Electric Telegraph.

BUT a very few copies of the second edition of Mr. POPE's valuable work on the telegraph remain unsold. It has not yet been decided whether to print a third edition immediately or not, and those who desire to secure a copy should do so at once. The success which has attended this work is highly complimentary to its talented author, and to the telegraphers who have given evidence of their appreciation of it, and their desire to obtain instruction, and to perfect themselves in their business.

Correction.

A TYPOGRAPHICAL error last week made it appear that Mr. P. H. Burns, recently of the Western Union Boston office, had graduated from the Howard Law School. It should have read the Law School of Harvard University, Cambridge, Mass.

The Proscribed Female Operators.

Two or three of the young ladies who left the Western Union office at the time of the strike are still unprovided with situations. We trust that they may soon be favorably located, and would again call the attention of those who desire the services of good operators to their case.

Miss SNOW, the Manager of the Ladies' Department at 145 Broadway, seems disposed to follow her victims with a persistent malignancy, which advancing years seems to inspire in some maiden ladies, and is determined that

they shall be driven to starvation, if possible. One of them had made arrangements for a situation in the Albany office, when Miss SNOW, who appears to combine to some extent the functions of General Superintendent of the Eastern Division with her other duties, sent instructions that she must not be employed, and she was not. Comment on this cruel malevolence is unnecessary.

Report on Hubbard's Postal Telegraph Scheme.

THE Senate Committee on Post-offices and Post-roads, in their report in favor of the bill (reported back) to establish the Postal Telegraph Company, express the belief that the time has come for connecting the telegraph with the postal service. America is the only country in which correspondence by telegraph is entrusted solely to private corporations. The investment, in proportion to the length of the lines, is large, the rates are higher, and the telegraph is less used than in most European countries, though there is no nation where it could be used to so great an advantage. In all other countries the charges are uniform for the same distance. Here they vary in different sections, and are higher at the South than at the West, and higher at the West than at the East, and therefore discriminate against those sections where, from the infrequency of the mails and the means of communication, the telegraph is most needed. The average cost of constructing telegraph lines in this country is \$170 per mile. The average cost in five European countries is \$75 per mile. It is not asserted that the wires can be built here as cheaply as in Europe, but there is no reason for this great difference. High rates are required in this country to yield a fair return upon the nominal investment. Competition has reduced the tariff between a few competing points, but at an increase of capital and private expense. The permanent remedy for this evil is a large reduction of capital, the consolidation of the competing companies, and a reduction of office expenses, by a union with the post-offices and by the pre-payment of telegrams by stamps. This will enable a great reduction to be made in the salaries, with a corresponding reduction of the private expenses on each message, and will extend the benefit of the telegraph to all classes and remove the causes of competition. The committee give a statement of the capital, expense and earnings of the Western Union Company, and allude to the Belgian and British lines, and say that they do not feel justified, in the present condition of our financial resources, to recommend a government telegraph, which would involve the expenditure of from eighteen to twenty millions of dollars for the lines of one company alone, and an annual tax upon the whole people for the benefit of the small number who use the telegraph. The advantages of the system recommended are in the reduced rates, in uniform rates for equal distances, and in fixed rates for press news, and in establishing as a right that which is now enjoyed as a favor. The telegraph companies have already agreed that the United States may purchase their lines by assenting to the provisions of an Act passed July 24, 1866. The committee conclude by saying that the postal telegraph system will depend for its success on the economy with which it is managed.

The Little Automatic Telegraph System.

THE National Telegraph Company, under the management of W. P. Westervelt, are making rapid progress in building their new line of telegraph between Washington and New York, and we are glad to know that we are to have the most substantial and reliable line ever constructed in this country for the use of the automatic system. The National Company is putting up the recently invented "compound wire"—a steel core covered with pure copper—which, with only half the weight of an ordinary iron telegraph wire, has over three times the tensile strength, and nearly four times the conductivity. The first cost of the wire is about double that ordinarily employed by the old telegraph companies, but the new wire is claimed to be at least ten times more durable than the common iron wire, whilst its vast superiority as a conductor of electricity will enable the new company to telegraph through long circuits promptly in the heaviest storms, when the ordinary wires are rendered useless.

The new line has been completed some days between this city and Washington, several gangs of workmen are rapidly setting the poles between Baltimore and New York, and it is expected that the line will be completed during the ensuing month. But, in the meantime, we understand the National Company will, within the next week or two, open the Baltimore and Washington offices, and begin to instruct operators—male and female—in the management of the new machinery, which, however, is

exceedingly simple, and can be quickly mastered by any person of ordinary ability.

Notwithstanding the statements which are being industriously circulated to the prejudice of the new automatic system, we adhere to the judgment we expressed when we first saw the new machine in operation last summer, and confidently believe that the automatic system is destined to effect an entire revolution in the telegraph and postal business of the country, and we should regard any action upon the question of the postal telegraph at Washington as extremely unwise until after the approaching tests of the new system of telegraphy. If these tests should prove, as we have good reason to believe they will, that the new system can transmit intelligence ten times faster than the old style of lines and old systems of telegraphing, it will very greatly simplify the question as to the future relations of the telegraph and the post-office department. By the slow Morse system any great reduction in the rates is impracticable, even under government control.—*Baltimore American*.

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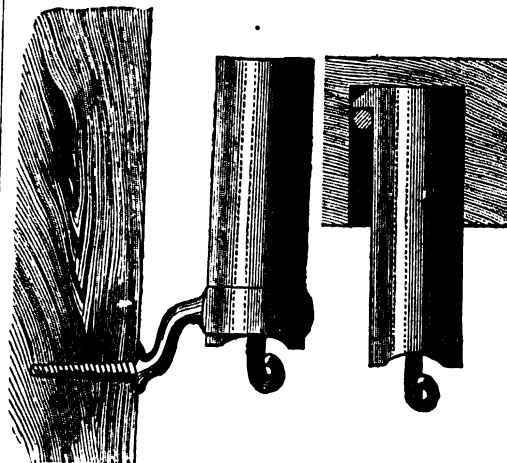
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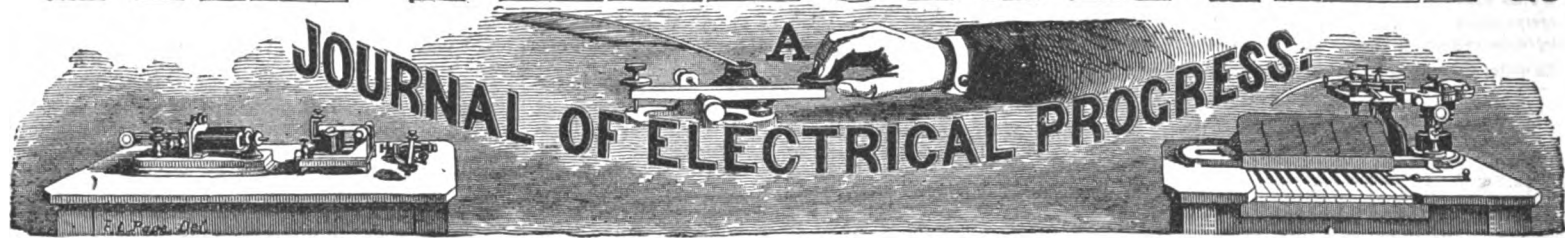
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J. N. ASHLEY,
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THE TELEGRAPHER.



Vol. VI.—No. 25.

New York, Saturday, February 12, 1870.

Whole No. 187.

THE PANAMA AND SOUTH PACIFIC TELEGRAPH COMPANY (LIMITED).

It is proposed to form a new Telegraph Company under this title, with a capital of £320,000 in 32,000 shares of £10 each, of which £260,000 only is offered for subscription here; the remaining £60,000 being reserved, according to the Concession from the Peruvian Government, for subscription in Peru. The shares are to be paid up by a deposit of £1 per share upon application, £1 10s. per share upon allotment, and the balance by instalments of £2 10s. each at intervals of two months. In case of no allotment being made, it is provided that the deposit, as is now usual, will be returned in full.

It appears that the rapidly approaching completion of the West India and Panama Telegraph Company's system will shortly place Europe and North America in telegraphic communication with Central America, but that there is still a link missing between Central America and South America. The object of the Panama and South Pacific Telegraph Company (Limited) is to supply this deficiency. Starting from a junction with the West India and Panama Telegraph Company, it will carry lines to Tumbez, one of the principal ports of Northern Peru, touching at such intermediate stations in Ecuador and New Granada as may be found desirable. At Tumbez this company's lines will connect with the wires of the National Telegraph Company of Peru, with whom, it is stated, an exclusive arrangement has been effected for interchange of traffic, and who will hold a considerable interest in the capital of this company.

The West India and Panama Telegraph Company has also entered into a similarly advantageous and exclusive agreement with the new company, and another similar arrangement exists between this first-mentioned company and the International Ocean Telegraph Company, connecting the United States with Cuba.

In the South, the National Telegraph Company of Peru, which appears to be the only undertaking of the kind in that country, with a capital of £400,000, has already established telegraphic communication from Tumbez to Iquique, connecting Lima, Callao, and the principal coast towns of Peru. It is rapidly pushing its lines southward towards Chili, which country will soon be united to the telegraphic system of the Argentine Confederation of Uruguay, and of Brazil, by lines now in course of construction between Valparaiso, St. Jago, Mendoza, Cordova, Rosario and Buenos Ayres. Hence to Montevideo a submarine cable is already in operation (said to pay, by the bye, 17 per cent. dividend), and the land line completed by the Brazilian Government from Rio Janeiro to Port Allegre will shortly be finished to Buenos Ayres.

Thus, nearly all the more important commercial towns, and the most populated and productive districts of South America, will be brought into communication, through this company's wires, acting as a main trunk line, with the West Indies, with North America and with Europe. And, as this trunk line will be worked in combination with the whole of the lines between the United States and South America, and as these companies hold valuable exclusive concessions for a term of 40 years, for laying cables between the Spanish West Indian Colonies and the United States, Central and South America, telegraphic competition will reasonably be excluded to both the north and the south of this company's lines.

Roundly, this company's system (according to the Official Report of Don Mariano F. Paz Soldan, late Director-General of Public Works in Peru, now Minister of Justice) will supply the demands of a population of 12,000,000, and of a rapidly increasing commerce of £19,000,000 per annum, exclusive of the Atlantic trade of the Argentine Republic and of New Granada.

The new cable will consist of about 1,100 miles of submarine cable and 30 miles of land line, to be manufactured by the India Rubber, Gutta Percha and Telegraph Works Company, Limited, at a cost, including manufacture and laying, of £300,000; and it will be completed in the course of the present year. The balance of £20,000 is considered sufficient for all other expenses, including stations, erection of land line, &c., &c., until the receipt of revenue by the company.

It appears that the Cuba line, after two years' working, now earns over £60,000 per annum. An estimate based upon this experience gives the probable earnings of this company at £100,000, and deducting from this £12,500 for working expenses, and £12,500 for a reserve fund, the annual net income would amount to say £75,000.

English Cable Telegraph Investments.

A LATE English weekly publishes the following details of the aid and encouragement which has been extended by English capitalists to ocean cable telegraphy:

"The characteristic energy of English capitalists has been newly shown in the extension of oceanic telegraphy. Some months ago we published a list of seven schemes, with a capital of nearly £6,000,000, which had been launched shortly after the success of the French Atlantic cable, and the list, inclusive of companies for telegraph construction, may now be extended to thirteen, with a capital of £9,000,000, namely:

1. British Indian Submarine Telegraph—Suez to Aden and Bombay	£3,200,000
2. *Direct English, Indian and Australian	2,500,000
3. Falmouth, Gibraltar and Malta	660,000
4. Great Northern Telegraph—extension and purchase of lines in Northern Europe	400,000
5. *India, Australia and China Submarine Telegraphs—First section, Ceylon to Penang	350,000
6. International Mid-Channel	25,000
7. West India and Panama	650,000
8. British Indian extension—Ceylon to Singapore	460,000
9. *Great Oceanic Telegraph—southwest of Ireland and Halifax	600,000
10. China Submarine Telegraph—Singapore to Hong Kong and Shanghai—first section	525,000
Do. do. additional capital for second section	300,000
11. British Australian	660,000
12. Great Northern Telegraph—China and Japan extension	600,000
13. Panama and South Pacific	320,000
Total	£9,250,000

* Withdrawn or in suspense.

"Deducting the three schemes marked, which have not succeeded, there remain ten companies with a capital of £6,000,000, all launched within a few months, for enterprises of this novel kind. If we include the two Atlantic cable companies, which are older, we should have twelve companies with a capital of about £9,000,000, almost all promoted or completed within a very short time, and nearly covering, moreover, the whole field to which such enterprise can extend. This is very prompt work, and ought to be remarked at a time when some reproaches are made against English energy for not having promoted a scheme like the Suez Canal. We are expending on oceanic telegraphs in a year about as much as the canal cost all the independent shareholders in ten. The two enterprises, besides, are not to be named together in importance—the judgment of the English capitalist as well as his energy being shown by his taking to the one and not to the other. The telegraphs in the present state of the world change materially the conditions of trade at comparatively little expense, and are, therefore, in great demand; and if the business is risky there are at least large profits in it—things which can hardly be said of the canal. It is not their neglect of a scheme not really demanded by business, or only in moderate demand, which will show that the enterprise of English capitalists has been beaten or approached in the promotion of important and novel undertakings."

(From the London Post.)

Proposed China Submarine Telegraph.

THE prospectus was issued yesterday evening of the China Submarine Telegraph Company, in connection with the Falmouth, Gibraltar and Malta, the Anglo-Mediterranean, the British Indian Submarine, and British Indian Extension Telegraph Companies, thus forming a fifth link in the line, and extending to the Empire of China the great system of submarine electric telegraphs between England and the East. Traffic arrangements have been entered into with the four companies above named, all of which are represented on the board, by which they have agreed to give an ample rebate upon their through rate, on all messages forwarded over their cables, from or to China.

The first section of the new line of telegraph will consist of a cable about 1,640 miles in length, to be laid from a station of the British Indian Extension Telegraph Company, in the Straits of Malacca, to Hong Kong. It is proposed to establish an intermediate station at Saigon, Cochin China, upon satisfactory arrangements being made with the French government. The second section, about 1,000 miles in length, is intended to be laid from Hong Kong to Shanghai, touching one or more of the other treaty ports; and hereafter the company have it in view to extend their lines to Japan. The capital is fixed at £520,000, in 52,000 shares of £10 each, of which £100,000 will be taken in fully paid up shares by the Telegraph Construction and Maintenance Company, which has contracted to manufacture and lay the cable from the Straits of Malacca to Hong Kong for the consideration of £508,000, the £100,000 in shares being retained in the hands of the new telegraph company until the line has been opened and successfully worked.

There remains of this capital 42,500 shares, which are now offered to the public. On these only £2 per share will be required prior to July, 1870, and the whole capital will not be called up until November 1st of the same year. The Telegraph Construction Company have contracted that the cable shall be shipped from England next year, and completely laid by June, 1871; and further, looking at the time it will necessarily take to lay the line, it has been specially contracted that the Construction and Maintenance Company shall allow five per cent. upon the paid up capital—payable half yearly—until the date fixed for the opening of the line, so that the shareholders will at once come into the receipt of interest as their calls fall due. It has also been arranged with the Construction Company that the second section of the company's cables shall be made and laid for £250,000, and be commenced when required. The capital for this section is proposed to be raised by a second issue of shares, with the sanction of a general meeting of the shareholders.

The prospectus states that it appears from recent published statistics that the English and foreign firms in Hong Kong and the treaty ports number 483. The Chinese firms dealing with foreigners in Hong Kong alone are 486. The foreign ships cleared and entered at Chinese ports in 1868 numbered 14,075, with an average tonnage of 6,418,503 tons. The total value of the imports and exports for Hong Kong and the treaty ports, in 1868, amounted, according to the customs returns, to £68,000,000. From these statistics, which are exclusive of the very important local trade, it cannot be doubted that there will be, as well in through messages to Europe and America as in messages between China and India, the Straits and the Eastern Archipelago, a very extensive telegraphic business, insuring very large dividends to the shareholders. It is considered premature to fix this company's tariff at present, but it will be regulated with a view to secure the largest possible amount of traffic.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, Feb. 9th.

TO THE EDITOR OF THE TELEGRAPHER.

LITTLE of interest has transpired in Congress in relation to telegraphic matters since my last week's letter. Mr. Washburne's postal telegraph committee has not yet got fairly to work, not having obtained from the House the desired authority to send for persons and papers.

In the Senate, on Monday, Mr. Corbett, of Oregon, from the committee on commerce, reported, without amendment, the bill to encourage telegraphic communication between the Eastern and Western continents. It gives to the American and Asiatic Telegraph Company the exclusive right, for fourteen years, to construct and maintain a submarine cable to Asia, commencing at a point south of Capa San Juan, in Washington Territory, and provides for detaching United States vessels to assist in the promotion of the enterprise.

I will send you a copy of this bill when it is printed. There is probably a large-sized cat in that meal tub.

The House committee of investigation into the New York gold conspiracy matter caused some excitement among telegraph managers and operators here, by a summons to appear before the committee to testify concerning despatches sent from here during that excitement. It is charged that, through a leak on some line in New York, the contents of certain official despatches have been communicated to certain brokers before they were delivered to the proper officials. The committee are earnestly endeavoring to find out where this leak is, and who are guilty in the matter. Should they succeed we may expect some interesting developments.

In the last number of THE TELEGRAPHER I noticed a communication from *Hyacinthe*, in which he refers to the "CAPITOL" letters. I have taken some pains to get at the facts in regard to the status of the Washington telegraphs on the postal telegraph question. *Hyacinthe's* statements would have been very good provided they were true; but I must emphatically deny that any such resolution as he states was passed by the operators in this city. On the contrary, it was rejected by a considerable majority, as can be proved, if necessary. And furthermore, I venture the assertion that to-day, if the operators in this city could be allowed a full, free, and fair expression of opinion, the majority would still be opposed to these postal telegraph schemes. Many of the telegraphers here regret that any mention of the resolution referred to was publicly made, as they dislike to become mixed up with the movement in any way, and as they had no doubt but that the introduction of the resolution was instigated by Mr. Washburne and other postal telegraph schemers, for the purpose of causing it to appear that their projects were endorsed by the practical telegraphers of the country. These gentlemen signally failed to secure the approval of the operators, some of whom are, no doubt, favorably disposed towards one particular measure; but they all, with a few exceptions, deem it unwise for them as a body to make public any expression of opinion either for or against the project at present.

You may rest assured that, so far as the Washington telegraphers, or, at the least, a large majority of them, are concerned, THE TELEGRAPHER has expressed their views fully, and if the same course is continued the paper will be fully endorsed and supported. So far as *Hyacinthe* is concerned, he offers no arguments, and his misstatements will gain him no friends. CAPITOL.

The Postal Telegraph.

WASHINGTON, D. C., Jan. 13th.

TO THE EDITOR OF THE TELEGRAPHER.

ALTHOUGH the postal telegraph proposition, to judge from the columns of your paper, would seem to be without friends among its patrons (readers and contributors), I am strongly inclined to believe that there are members of the fraternity who favor it, but whose opinions, from various motives, have not as yet been made public.

My object in writing is to awaken interest, and if possible discussion among operators, in regard to a measure by the success of which they would be so immediately affected. Giving you full credit for the honesty and disinterestedness of your opposition to a

Government telegraph, I am confident you will not impair the influence which THE TELEGRAPHER naturally exerts as "the operators' organ," by refusing to look at the other side of the question—and a favorable opportunity for discussion seems now to have been presented by the publication of Mr. Washburne's bill, and the comments thereon.

The first half of the two column editorial to which I refer is devoted to the demonstration of the theory that "genius runs in families" (illustrating it by laudatory allusion to the members of a family which has certainly been long and honorably known to the history of our country), and is not, on that account, open to objection. But the comparison of the present proposition, by which the Government would take control of the entire telegraph system, with that of Mr. E. B. Washburne, appropriating \$75,000 for an experimental line from Washington to New York, or that of Mr. Hubbard, offering to build and work lines for the Government under contract, is, I submit, scarcely fair. The reasons which might, even had the subject been fairly investigated, have led to the rejection of the latter, do not strictly apply to the former.

Considering the matter from a purely public point of view, the first "salient absurdity" which General Washburne's bill presents to the editorial vision is that it "prohibits all city telegraphs, gold and stock reporting lines," &c. The first section of the bill enacts that after a certain date only the Government shall transmit messages "for hire." Should brokers feel inclined to purchase gold indicators or stock reporting lines, and run them as a business firm manages its private telegraph, there is nothing in the bill to prevent them. Or, if they are not (as has been intimated) dependent for these luxuries upon a young monopoly as grasping and unreasonable as the Western Union itself—if they desire to have the present system perpetuated, a slight change in the phraseology of the bill would secure to Mr. Callahan his rights, and to the brokers of New York (the only city where such telegraphs exist) their cheaply bought privileges. A city telegraph (also a New York institution), to be of any benefit, should be connected with the general system, and so would properly fall under the same control.

The second "salient absurdity" appears to be the extraordinary proposition that Congress should hold the companies to a contract into which the latter have all willingly and gladly entered, namely, a contract to sell their lines to the Government after July 24th, 1871, at an appraised value, in consideration of right of way granted them over post-roads and privileges on public lands. That this is an absurdity does not clearly appear from perusal of your article; and the subtle distinction sought to be drawn between "cash" and "market" values is not fully understood. "Appraised value" is the language of the act of 1866, and it is to be presumed that the companies, in accepting that act, knew what they were doing. For breach of this contract the Government would of course be entitled to damages, and the simplest way to enforce its performance is evidently that laid down in the bill, and which forms its third "salient absurdity."

The fourth objection is the number of non-paying offices it would establish; and in reference to this point, and the low tariff it provides for, some very vague and venturesome declarations are made, which it is unnecessary here to controvert.

We are then referred to the fact that the five times watered stock of the Western Union Company is selling at 33 per cent., as an illustration of the unproductiveness of the telegraph business, and are informed that the affairs of that company, which carries such an enormous D. H. business, and spends so much money in crushing its operators and opposition lines, are "wisely and economically administered." With these two indubitable assertions the argument against postal telegraphs in general, and Mr. Washburne's scheme in particular, is brought to a triumphant conclusion.

I do not propose to attempt a defence of Mr. Washburne's bill. It doubtless has its imperfections, even in the eyes of its advocates, but, as every one knows, it has yet to go to a committee for elaboration. Upon the evidence before that committee they will decide whether a uniform rate of a cent per word throughout the United States will pay or not, and to precisely what class of post-offices the telegraph should be extended; having done which, they will probably bring in a report, compiled without the assistance of Western Union officials, and introducing the perfected bill, which will then be fairly before Congress and the people. So that, as Mr. Washburne admits in his recent speech, its exact present form is a matter of indifference.

Leaving the bill, then, out of the question, what is the real argument against the object which it proposes to accomplish—the assumption of the telegraph by the Government? If it be wrong, or if it be impolitic, it certainly ought not to prevail.

By the contract which the companies entered into, however, allowing the Government to take possession of their lines, all objections as to the right or justice of such a proceeding were expressly waived, and the question became one of simple expediency.

No one will deny that cheap telegraphy would be a great benefit to the people of the country. It is equally certain, to any one in the slightest degree familiar with the subject, that Government owning all the lines, and having no dividends or office rents to pay, no D. H. business to carry, could effect a vast reduction in tariffs, and, even with no increase of business, could pay expenses. Experience in other countries shows, however, that a reduction of 200 or 300 per cent. in rates has always been followed by an increase of 250 or 350 per cent. in the number of messages. If that be the case in the petty states of Europe, where mail communication is so frequent and so regular, it is reasonable to suppose that the proportion would hold good in this country, where the telegraph is only as yet resorted to when the mail is too slow and inefficient. Nay, more, I will "venture to say" that the increase of business in America, consequent upon a reduction of tariffs, would be much greater than in countries of smaller distances and more rapid mails, and that this difference in our favor would overbalance the greater difficulty we have in maintaining lines on account of our sparse population. Our present telegraphic facilities are ample for such increased business, or would be, if under a single and efficient management. Whoever has read the speech of Mr. Washburne (as your article, Mr. Editor, clearly shows you have not) cannot have failed to be convinced of the falsity of that "statement" which some of us had the pleasure of sending over the wires last spring, to the exclusion of honest people's messages; and, whoever knows the financial status of the Western Union Company, knows that under a different regime a reduction of at least two thirds from present tariffs would be feasible. If such a reduction would be a benefit to the people, and if the Government, by the voluntary act of the companies, has acquired the right to secure that benefit to the people, is not the exertion of that right an imperative duty?

An objection, and apparently a strong one, to the measure, is, that Government cannot do its work so cheaply as a private party. If this objection be valid, its only reason is to be found in the dishonesty or incompetency of officials, and great corporations are proportionally as liable to suffer from these causes as the Government. It has, however, been clearly demonstrated (in the matter of the construction of public buildings, for instance) that where Government has done the work through its own officers, selected for their thorough knowledge of their duties, it has in all cases been better, more quickly, and more economically done than would have been possible had it been performed by contract. We are to have no contractors to run our postal telegraph, and the vast means at the disposal of the Government would, one might think, enable it to control the market for its necessary supplies.

Another weighty objection is the increase of patronage, and consequently of power, which the measure would entail upon the executive; and this it is sought to obviate in the last section of Mr. Washburne's bill, which provides that persons holding offices or employments created by the act shall be removed only for cause. The day is not far distant when our whole civil service will cease to be an engine of political power—and such a provision, if the bill were passed, would be the first step in that direction.

Although I have, perhaps, occupied your space too much with this, my first communication to your columns, during the five years that I have been a subscriber, I have attempted to touch only upon the most "salient" features of this interesting subject, and have treated it altogether from an outside standpoint. There is one point remaining, about which I hazarded a belief in the beginning of this letter, and upon that point I should like to know if THE TELEGRAPHER is the true exponent of the opinions of those who support it: it is whether the interests of operators would be best subserved by a Government telegraph or by the continuance of the present system? ISLAND.

A Vindication of Mr. Sawyer.

SAN FRANCISCO, January 25.

TO THE EDITOR OF THE TELEGRAPHER.

WE have read with much regret, from your issue of the 15th instant, a statement made by Mr. Field, Chief Operator of this Dist. T. P. L., in regard to Mr. Sawyer, our fellow operator in this office, and we feel a still deeper regret at the editorial comments thereon. Had you known the facts we think you would never have taken the view of the matter that you did in your editorial.

The character of one who has heretofore been looked upon as honorable in every way, and been regarded as a gentleman, is thus made to appear as only fit for the most degraded and fiendish of human beings.

We are sorry that the heat and excitement of the late strike should have so influenced the mind of any of our brethren as to lead them to make a statement for which they had no foundation whatever in fact—only surmise.

No one knew that Mr. Sawyer divulged the secrets of the League, but simply from his having withdrawn from it, after fully understanding its object, and becoming satisfied that a strike was intended, it was supposed that he made known to the officers of the W. U. T. Co. the existence of the League.

Now we wish to say—and we pledge our honor on the statement—that Mr. Sawyer did not in any way whatever make known to the officers of the company the existence of such a League, nor that there was any strike in contemplation. We also state that the officers of the company did not know of the existence of the League at all until after the strike had taken place. They had positive knowledge that if certain contingencies should arise the operators would strike (and this knowledge was gained through an officer of the League in good standing) but they had no knowledge, from any source, that the operators were bound together all over the country, or even in California, in a League such as was afterwards developed.

In conclusion we would say that we make these statements voluntarily—not at the solicitation of Mr. Sawyer or the W. U. T. Co., nor to defend the company, but to set our brother operator right before the fraternity, who have been invoked to hold him forever a "marked," and to be "socially ostracized by every honorable individual."

A. H. POST, } Non-members
C. P. HOAG, } of the
JAS. L. LILLIS, } T. P. L.

A Rascally Telegrapher.

CHILICOTHE, OHIO, January 29.

TO THE EDITOR OF THE TELEGRAPHER.

I WISH to make a statement, through the columns of THE TELEGRAPHER, in order that the profession may be on their guard against a certain "blackleg," who is now "on the wing" in search of victims. About the middle of November he applied to this company for a situation, furnishing good recommendations and passing himself off as "J. F. Guthridge." He was accordingly employed as operator and railroad agent at Mineral City. On January seventeenth he absconded, taking with him the receipts of the office, besides packages of money entrusted to his care—when last heard from he was in Philadelphia en route for New York. It now appears that his real name is "Joe Guthridge," and the recommendations belong to one J. F. Guthridge, who is a first class operator, highly esteemed by the fraternity. In this way he is enabled to practice his impositions. He is about thirty years old, six feet high, rough features, very dark curly hair. Any information as to his whereabouts will be thankfully received, as this company is desirous of bringing him to speedy justice and putting an end to his infamous practices.

J. N. MILLER,
Manager Telegraph Department,
M. & C. R. R.

PERSONALS.

Mr. U. C. PALMER, recently of Hannibal, Missouri, has accepted a position as operator on Union Pacific line, at Weber Station, Utah.

Mr. J. W. BOOTH has been transferred from Promontory, Utah, to Terrace, Utah Station of the C. P. R. R. telegraph.

R. J. HUTCHINSON, late of the Western Union office, at 145 Broadway, has taken a position with the Bankers and Brokers' Company, at 16 Broad street, in this city.

The present address of Mr. FRANK L. ROBERTSON, who left the U. P. R. R. office at Bitter Creek, Wyoming Territory, about first June, 1869, is wanted.

Mr. JOHN LAUSKAIL has been transferred from the Montreal office of the Montreal Telegraph Company to the Parli House, Ottawa, office of the same company.

Mr. M. MAREAN, having decided not to accompany the Darian Exploring Expedition, has been appointed manager of the Western Union Capitol office, and night manager at the Main office, Washington, D. C.

Mr. G. C. MAYNARD has been appointed assistant manager of the Western Union main office, Washington, D. C.

JOHN CURRAN and JULE GUTHRIDGE, formerly of W. U., are now working for C. P. R. R., former at Simpson's Station, latter at Sacramento.

JNO. E. CLARK has returned to work for W. U. Co., in San Francisco.

L. W. STORROR has resumed his old position in Sacramento.

CHAS. J. THOMAS is running Truckee office for W. U. Company.

D. C. WILLIAMS, one of California's oldest operators, is now working in Sacramento.

JAS. K. PARSONS has gone to work for the C. P. R. R.

D. B. BURNETT left for Panama, Feb. 3d, expecting a position with the Panama Railroad Co.

E. H. REESE, L. N. JACOBS, F. S. VAN VALKENBURG, S. B. RANKIN, and JASPER KELLER are still in San Francisco, looking around for a job.

THE TELEGRAPH.

(By Atlantic Cable.)

THE GOVERNMENT TELEGRAPH SYSTEM.

LONDON, Feb. 4th.—The delays noticeable in the cable service recently do not arise from any imperfections in the cable themselves or the land connections. The government authorities, on the 1st, assumed the control of the telegraphic system of the kingdom, and to this change alone must be ascribed the present derangement.

LONDON, Feb. 5th.—Extraordinary scenes are occurring at the telegraph offices throughout England; the dissatisfaction is universal, and the complaints of delay and error have been greatly multiplied since the new arrangement went into effect. In this city, particularly, crowds of people surround the offices, and there is the utmost confusion.

THE GREAT EASTERN AT BOMBAY.

LONDON, Feb. 4th.—Despatches received to-day from India, by overland lines, confirm the previous announcement of the arrival of the steamship Great Eastern at Bombay. She will commence the work of laying a cable to the mouth of the Red Sea.

MORE ATLANTIC CABLE.

LONDON, Feb. 8th.—Another cable, to connect Wales and Rhode Island, is shortly to be laid. The contract for the cable, to cost six hundred thousand pounds, has just been signed.

THE TELEGRAPH INTERRUPTED.

VALENTIA, Feb. 7th.—There is a total interruption on the Irish telegraph lines. Communication eastward is entirely cut off.

COMPLETION OF THE INDO-EUROPEAN LINE.

LONDON, Feb. 7th.—The Indo-European Telegraph Company have just completed their line from London direct to India. This line is composed of land wire and cables, and runs via Berlin, Warsaw, Odessa, Teheran, Persia, through the Persian Gulf and Indian Ocean to Bombay, Madras, Calcutta, &c.

Messages will be taken from all stations in the United States, after the 15th inst., at the following rates in gold:

To Kurrachee, for 10 words.....	\$8 10
To Kurrachee, for 20 words.....	12 38
To Stations West of Chittagong, for 10 words.....	9 25
To Stations West of Chittagong, for 20 words.....	14 25
To Stations East of Chittagong, for 10 words.....	10 25
To Stations East of Chittagong, for 20 words.....	15 25

Every additional ten words, or fraction of ten words beyond twenty words, will be charged one half of the twenty-word rate. Chittagong is about 92 degrees East longitude.

TELEGRAPHIC COMMUNICATION.

VALENTIA, IRELAND, Feb. 9th.—The sudden interruption of telegraphic communication eastward, Feb. 7th, is now explained. While the government employes were repairing the general telegraph office at London, on that day, in order to accommodate the great increase in the telegraphic business occasioned by the change in the system, it was found necessary to cut all the wires to the westward. Communication was soon restored, and the service is now excellent in all directions.

THE Pacific and Atlantic Co. have opened a branch office at 74 Beaver street, corner of Hanover, in this city, of which Mr. James F. Crate, late of Western Union "Ex" office, has been appointed manager. This is an excellent appointment, as is evinced by the large amount of business already transacted at the new office, which is largely the result of Mr. Crate's popularity among the business men of that portion of the city.

TELEGRAPHIC BREVITIES.

MR. ORTON, President of the Western Union Telegraph Company, gives, as the result of his recent investigation of telegraphy in Europe, that the charges from point to point are fully as high, if not higher than in America.

Mr. Sanger, who has been for many years the able manager of the Magnetic Telegraph Company in Ireland, has been appointed, for that country, the manager of the Government telegraphs.

There are now seven telegraphic offices established and ready for business on the Central Branch road, west of Atchison, viz: Muscotah, Netawaka, Wetmore, Centralia, Frankfort, Irving and Waterville.

The Cable Consolidation.

THE *European Mail* says the union of the interests of the different Atlantic cables, including the Newfoundland Company, was completed, in all its details, on the 19th of January. The original offer on the part of the Anglo-American was, that the French should have one third of the gross receipts, and the Anglo-American line the rest; on the other hand, the French demanded forty per cent., and this disagreement threatened to break up the negotiations. A compromise has, fortunately for all parties, been arrived at, by which the gross earnings will be divided in the proportion of 36½ and 63½, respectively, between the French and the Anglo-American Companies. The Atlantic 8 per cent. and the original 4 per cent. shareholders are to receive between them £375,000, and then the old Atlantic Company will be wound up. Meetings of shareholders will at once be called to ratify these arrangements.

A Despatch from the Bottom of the Mississippi River.

THE following private despatch, just received in this city, records a new telegraphic feat:

"The St. Louis Bridge Company is this day placed in electric communication with the air chamber under their east pier, thus increasing the safety and promoting the progress of the work. The chief engineer, now in the air chamber, sixty-eight feet below the surface of the Mississippi, sends his compliments to the eastern stockholders, and reports this pier twenty-six feet six inches from the rock. Fifty-four feet of sand have been extracted, and the average rate of descent of the pier during the last ten days has been thirteen inches a day. Work on the western pier is making satisfactory progress."

"JAMES B. EADS, Chief Engineer."

A Serious Accident.

ON Monday last a linesman, named John Doyle, employed in the construction of the new Fire Alarm Telegraph in this city, fell from a telegraph pole in Centre st., between Worth and Pearl. He was at the top of the pole, putting up a new wire, when a Fourth avenue car ran against the wire, throwing Doyle to the ground. One of his arms was broken, and he was injured internally. When taken up Doyle could not speak. The driver of the car was arrested.

New Patents.

For the week ending Feb. 1, and each bearing that date.

No. 99,300.—ELECTRO-MAGNETIC MACHINE. A. E. Dupas, New Orleans, La.

Claim.—1. The multipolar electro-magnet C C' C'', when constructed and applied as described, in connection with the double vibrating frame E, for the purpose set forth.

2. The double vibrating frame E, in combination with the rectangular partially hollow armatures D D', for the purpose set forth.

3. The mode herein described of making magnetizing coils, for the purpose set forth.

4. The engine herein described, as a whole, for the purpose set forth.

No. 99,311.—ELECTRIC CLOCK. Samuel A. Kennedy, Attleborough, Pa., assignor to the Kennedy Electric Clock Company, New York city.

Claim.—1. Method of vibrating a pendulum, having a magnet attached thereto, by the repulsion of a single electric coil, always having the same polarity as the end of the magnet opposite thereto, and whose connection with the battery is intermittently broken.

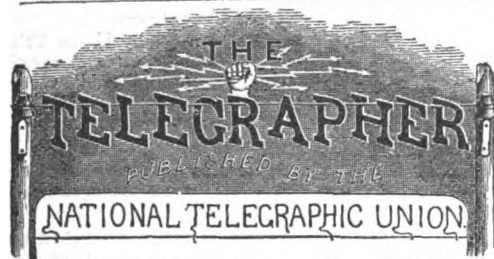
2. For the use and purposes of an electric clock, the employment of a clock-train, consisting of a single wheel, M, driven directly by the pinion of the ratchet, which is in turn driven by the pendulum lever.

3. Regulating the angle and extent of catch of the driving pawl of a clock, by means of the rock shaft P' and screw P, arranged and operated in the manner described.

4. The combination of the set screw W, slide U', and its parts, and the spring T at the top of the pendulum, to adjust the length of the latter, substantially as herein shown and described.

5. Rendering the resistance of the lever 8 to the pendulum uniform, by always arresting the gravitating movement of said lever at a fixed point, in the manner described.

6. Also, the manner of adjusting the position of the electric coil F, by having a slotted bar, Y, with set screw extending through it into the board or tablet A, substantially as shown.



SATURDAY, FEBRUARY 12, 1870.

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A WORD FOR THE TELEGRAPHER.

We trust that we may be excused for addressing a few words to the practical telegraphers of the country, on behalf of their organ, THE TELEGRAPHER.

It has been universally conceded that the publication of an organ, through which their side of the case could be presented, their rights and privileges be sustained, and their wrongs made public, has been of great advantage to the practical telegraphers of the country. Never was the necessity for maintaining such an organ more imperative than at the present time. The Western Union Managers, angered and indignant at the recent nearly successful attempt of their employes to demonstrate that they have rights, which even that company is bound to respect, are determined if possible to destroy the paper, and ruin its Editor and Publisher. To accomplish this no effort or device will be left untried.

While this paper is published they know that the complete subjugation of their employes is impossible. While through its columns the telegrapher can secure a hearing, their combination with the Associated Press, by which they have succeeded in silencing the greater portion of the influential press of the country, or arraying it against their employes, is but partially successful. The incompetence and malignancy of certain of the officials of that company cannot be covered up, and these, as they writhe under merited exposure and castigation, utter curses both loud and deep against the telegraphers' organ. That the condition of telegraph employes in this country is even tolerable, is due to the fear of this journal on the part of tyrannical telegraph managers, and a realization of its influence.

We have met and defeated previous attempts of these officials to destroy this paper, and we shall do it again. In the future, as in the past, we shall be frank and outspoken upon all telegraphic abuses, from whatever quarter they may come. In the future, as in the past, we shall say and do nothing not inspired by truth and justice. When we can commend honestly the course of any telegraph company or managers, we shall do so. We have no enmities or revenges to gratify; all we ask is fair and just treatment of telegraph employes, and these they shall have, as far as the influence of this paper can secure them.

It has been known to many of our readers, probably to most of them, that heretofore the Editor and Publisher of this paper has held a position in the office of the Associated Press, in this city. With the present week that connection closes, and we shall hereafter be able to devote more time and attention to the paper. We intend to make it, in the future, even more worthy the support of those by whom and for whom it is published, than heretofore.

We have, from the first, been cheered by a liberal support and a hearty appreciation of our services from our telegraphic brethren. For these we return our heart-

felt thanks. We ask now that every telegrapher into whose hands the paper may come shall realize the importance, not merely of a continuance but of an increased support of their organ. It is their fight in which we are engaged, and it is of far more importance to them than to us that the paper should be sustained. We have sacrificed much for their sake, and we confidently ask them to stand by us now. Let every telegrapher constitute himself or herself an agent of THE TELEGRAPHER, and see to it that not only his or her name is on its subscription list, but that its claims for support are brought to the attention of others, and their coöperation secured. With such additional support we shall be enabled to make the paper, in every respect, a credit to the profession, and more powerful for good than ever before.

A Practical Co-operative Telegraph Line.

WHILE the Western Union Telegraph Company and its operators were engaged in open warfare, arising from a refusal to recognize the rights of organized labor, a far more pleasant manner of settling a similar difficulty was being enacted on the lines of the Bankers and Brokers' Company. It will be remembered that during the month of December a reduced schedule of salaries was presented to the employes of this company for their approval. This reduction was declined by nearly all the operators, and the matter was dropped. Instead of ignoring the rights of their employes to unite in declining to enter into such an arrangement, and perhaps bringing about a "strike," by a foolish attempt to force the reduction, the manager of the line drew up a coöperative plan, which, having been signed by the employes, and approved by the stockholders and Board of Directors, went into effect on the 1st of January.

We have not investigated the details of the system, but the bare fact that the officers of the company have thus endeavored to enlist the aid and coöperation of its employes, is evidence of a step in the right direction. Whatever may be the result of this experiment it cannot be considered as a fair trial. Business is very dull, and that particular class of broker messages upon which this line has depended since its construction has diminished considerably since the September panic. Competition is also brisk, as the territory is mostly covered by four different lines. It is also worthy of notice that the operators were not called upon until the eleventh hour, when no other feasible plan could be thought of to give this company an advantage over its competitors.

If fairly managed there can be no doubt that the company will be benefited as well as its employes, for we have already heard of various schemes which the latter propose to set on foot in order to secure public patronage. They have never before had any incentive beyond a feeling of pride in the "receipts" of their respective offices. Now they can tell their customers that every man through whose hands their messages pass has a pecuniary interest in its prompt and correct transmission, and if proper measures are taken to place these facts before the public, we believe that good results will follow.

The Government Telegraph in Great Britain.

As will be seen by cable despatches which we publish on another page, the transfer of the British telegraph system to the management of the Government has been attended with great delay and inaccuracies in the transmission of messages, which have created dissatisfaction and excitement. Some confusion and delay was to be expected from so radical a change in telegraphic management, but we are at a loss to understand this sudden and complete disarrangement. It may be that the Government, in order to reduce the expenses, has dispensed with the services of experienced employes and supplied their places with cheaper and incompetent professionals. More complete mail advices will, doubtless, give us the desired information and explanation.

It will be well for the postal telegraph enthusiasts in

this country to wait the development of the working and results of the experiment in Great Britain before they produce a similar unfortunate condition of telegraphic affairs in this country. We have no doubt but that the experiment will work more satisfactorily in Great Britain than in this country, for the manner of conducting public business there is better adapted to telegraph management than in our own.

We would also, in all sincerity, advise telegraph employes who, in their desire to punish the Western Union Company and destroy its partial monopoly, are disposed to favor a Government telegraph monopoly, to await the development of the effect of the change upon their British brethren. Whoever may be benefited by a Government control of the telegraph we are confident that it will not be the telegraph employes.

Return of President Orton.

THE steamer Rhein, from Bremen, via Southampton, arrived here on Sunday last. Among her passengers was Mr. WILLIAM ORTON, the President of the Western Union Telegraph Company. Mr. ORTON does not return a day too soon for the interests of the great corporation of which he is the executive. The subordinates, to whom the management of the company was necessarily entrusted during his absence, have pursued a course in the treatment of its employes which has increased and intensified the wide-spread dissatisfaction among them. We trust that Mr. ORTON will immediately use his great power and influence to establish a kind and just system of management, in place of that which has resulted in making the employes of the company its bitterest enemies, and that at least he will put a stop at once to the inhuman and scandalous persecution of the ladies who left the employ of the company during the recent strike. The feeling of the employes generally towards Mr. ORTON is friendly, and he now has it in his power to firmly establish himself in their respect and esteem.

Afraid of the Truth.

WE understand that General Superintendent ANSON STAGER and District Superintendent WILSON, of Chicago, are making themselves unnecessarily unhappy in regard to THE TELEGRAPHER. As this paper has survived the efforts of their masters to destroy it, we think it has sufficient vitality to withstand their petty malice.

Unless we are misinformed, these worthies have undertaken the supervision of the mental and literary pabulum of the employes under their charge, and in humble imitation of other and more powerful despots, have resolved to proscribe this paper, and prevent its circulation among the unfortunates who are obliged to submit to their tyranny. We knew that the truth had terrors for them, as for all men of despotic proclivities, who, by a combination of fortuitous circumstances, are for a time entrusted with a little authority, but did not suppose that they were in such mental fear of it as to attempt directly the prohibition of the organ through which their deeds are made public.

We shall endeavor to make the paper so interesting that the Western Union District and General Superintendents, even, would as soon think of doing without their morning bitters as without the weekly issue of THE TELEGRAPHER.

Culley's Hand-book of Practical Telegraphy.

It will be noticed, by reference to our advertising columns, that VAN NOSTRAND has just issued an American edition of this excellent work, containing all the recent revisions and additions. The fact that no less than four editions of this book have already appeared, each with extensive additions and improvements, is a sufficient guarantee of the value of its contents. It is our intention shortly to review this work more at length, but in the meantime we can assure those interested in scientific and practical telegraphy, that they will find this treatise a useful, if not an indispensable addition to their

libraries. Mr. CULLER's hand-book has been approved by the officers of the Electric Telegraph Company of England, and officially adopted by the Department of Telegraphs in India. Its author has been appointed Engineer of all the Telegraphs in Great Britain by the Government, which has recently assumed their control. In that country this department is evidence that he thoroughly understands telegraphy in all its branches.

To Correspondents.

We are obliged to omit a number of interesting communications intended for this week's paper. Will give all a chance to be heard as soon as possible.

BORN.

SUMSMAN.—On Saturday, 5th inst., to A. L. SUMSMAN, of the Western Union Telegraph office, Providence, R. I., a son.

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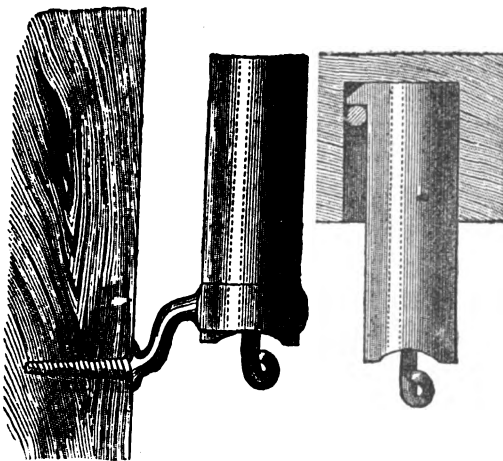
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(Adjoining the American House.)

They manufacture Electric and other Fine Machinery to order. Their Special Inventions are:

The Electro-Magnetic Watch Clock,
which is the best Watchman's time recorder in the world.

The Telegraphic Gas-Holder Gauge,
which constantly shows at the works the quantity of Gas in the Holders.

A System of Many Clock Dials,
controlled electrically by one Standard Timepiece.

An Electric Vane and Register,
which shows within doors the direction of the wind at all times.

A Magneto-Electric Alphabetical Dial-Telegraph.

The Best and most Economical for Private Business and Railroad purposes, requiring no voltaic battery.

THEY SOLICIT ORDERS FOR

Chronographs, and Astronomical Clocks,
Regulators, &c., &c.

DR. L. BRADLEY,

AT NO. 7 EXCHANGE PLACE,

Jersey City, N. J.,

Keeps constantly on hand and for sale his

Improved Telegraph Instruments.

Having adopted the use of

OREIDE METAL,

which is much RICHER AND FINER than brass, he now presents his work in a style and of a quality that are unsurpassed.

His relays were awarded the

FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the *Relays*, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same.

He is also manufacturing the

IMPROVED BUTTON REPEATER,

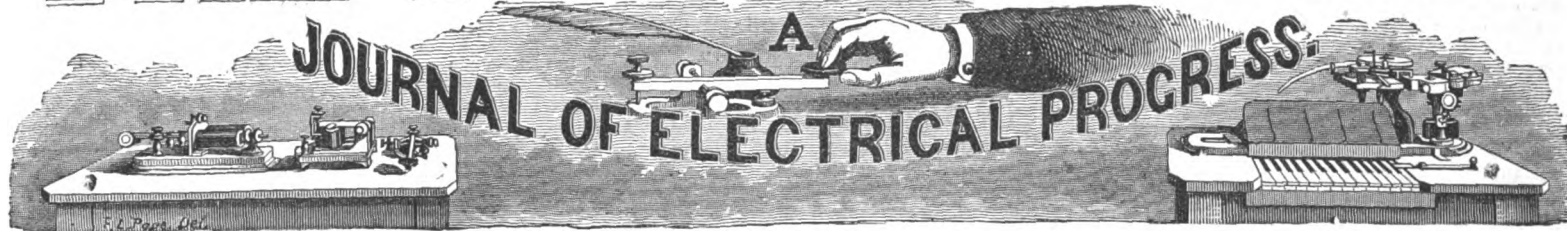
the cheapest, most reliable and simple repeater as yet invented

PRICES.

Button Repeaters.....	\$6 00
Relays, with helices in bone rubber cylinders (very fine).....	19 50
Small Box Relays.....	16 00
Medium Box Relays.....	17 00
Main Sounders, some as the above, with heavy armature levers without local connections, 75 cents less.	
Pocket Relays, with all the adjustments of the above, and good Lever Keys.....	22 00
Excellent Registers.....	40 00
Pony Sounders.....	6 75
Keys.....	6 50

All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittance may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package. He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

THE TELEGRAPH.



Vol. VI.—No. 26.

New York, Saturday, February 19, 1870.

Whole No. 188.

[From the *Scientific American*.]

LECLANCHE'S BATTERY.

MESSRS. EDITORS: I see, in the last number of the *Scientific American*, that you desire some information on Leclanche's battery. Starting on very judicious considerations, M. Leclanche has devised a single liquid battery, and obtains a constant current by an arrangement unknown before; all the batteries giving constant currents being hitherto employing two liquids.

In every battery the body receiving the positive electricity must be inoxidizable, a good conductor, and possess such affinity for hydrogen that the latter is seized as soon as produced, and thus the perturbations caused by the presence of free hydrogen are prevented.

The peroxide of manganese possesses all these qualities in the highest degree, being inoxidizable, insoluble, and possessing great electric conductivity, and affinity for combustible bodies. It therefore constitutes a very good positive element.

As a negative body, M. Leclanche retains the zinc, which possesses all the requisite properties for the purpose. As for the liquid coming in contact with the two poles, the hydrochlorate of ammonia, or the commercial sal ammoniac, has received M. Leclanche's preference.

Practically, for the sheet of peroxide of manganese, M. Leclanche has substituted crushed peroxide, kept in a porous jar; the positive electricity of this mass is collected by means of a plate of gas carbon. It is necessary to use a very pure peroxide. A good conductor, the best known for this purpose, is known in the market under the name of *manganese aiguilli*. It is crystallized, silky, and possesses a very pronounced graphitoid lustre. If it joins to these qualities that of being hard, it is then the best conductor. To use this peroxide, first separate it from the *gangue*; then crush the mass into coarse grains. It is then passed over a metallic wire cloth, to separate the dust; an equal quantity of crushed gas carbon is added, and you have thus the best conducting body.

As for the solution of sal ammoniac, it is better to use it, always at the highest degree of concentration. By adding to the liquid an excess of this salt, it gradually dissolves and keeps up the strength of the solution. Care must be taken that this solution does not wet the porous jar higher than the middle, as the drier the mass contained in the porous jar is kept the better are the conditions of conductivity and working.

This battery possesses a considerable electromotive power. This power is represented by 1.382, the power of the sulphate of copper battery being taken for unity. Its resistance is relatively very weak, a very advantageous circumstance for telegraphing.

Experience has proved that 28 elements of Leclanche's are amply equivalent to 40 of Daniell's. The Leclanche battery, put in comparison with the Marie Davy or the sulphate of mercury battery, much used latterly on telegraph lines, is preferred, as it requires less care; the sulphate of mercury being also more expensive.

The cost of the sulphate of mercury in France is from three to 3½ francs per kilogramme, or two pounds four ounces, supposing all the residues collected and resold without loss; but as this is practically impossible, the cost is seven francs per kilogramme. The kilogramme of manganese costs from 16 to 17 cents.

An element of Leclanche, remaining a year without working, will lose nothing except by the oxidization of the zinc in the atmosphere, and this is so insignificant it does not amount to one per cent. It is always ready to be set at work, and will last in a telegraph service from one to three years.

Over 20,000 elements of Leclanche are actually in use by different railroad companies in France and Belgium, and numerous telegraph stations have been working with perfect regularity for two years without the least

interruption. It is principally used in France, Belgium, Holland, Austria and Italy.

In France the *Chemin de fer de l'Est* has adopted it, and the *Compagnie de l'Ouest* employs it with the apparatus of Tiers. It is also used in a great number of establishments for galvanoplasty, gilding and silver-plating, and at Brussels (Belgium) it regulates all the electric clocks.

C. WIDEMANN.

The Postal Telegraph.

THE following, from the *Springfield Republican*, a semi-official organ of the Western Union Telegraph Company, which is "inspired," as the French term it, by Vice-President WALKER and Mr. GEO. B. PRESCOTT, of that company, may be regarded as indicating the *present* position of the Western Union magnates on the question of a postal telegraph:

"It is not probable that the present Congress will take any decisive action on this subject either way. The business is hardly ripe enough for intelligent, final action. But if it should, some such bill as this is more likely to be passed than any other; and, in the event of its passage, the Western Union Telegraph Company will undoubtedly come forward and make the contract for the service. Certainly there are already telegraph lines enough in the country; there is no occasion for new ones being built; and the Government would not be justified in stamping out the vast amount of property which private parties have now invested in this business. If, by taking the telegraph under its wing, and holding a sort of supervision of its prices and its management, the Government can, as proposed in this measure, secure to the country both better and cheaper service than it now has, all of us will greatly rejoice, but we do not think the situation of the business promises success for such benefits now. They are among the blessings of a reformed currency and a more systematic economy of administration than prevails at present. And when it becomes assured, as we think it will be before the question is pushed much further, that telegraphing cannot be done on the scale proposed with the prices named, and, moreover, that the Western Union Company will take the contract with the Government, if the experiment should be pushed on to trial, there will be likely to be a great deal less personal interest felt in the matter than there has been.

Government as a Common Carrier.

THE Government of the United States has a monopoly of the carriage of letters between its citizens. Private enterprise, however, has devised a quicker way than its mails for all correspondence that needs haste; and the private telegraph system has rapidly grown, in spite of heavy taxes upon it, to an importance not second to that of the letter business of the post-office itself. Advocates of centralization and of paternal government now propose that Congress shall take this system also out of the hands of private enterprise, which has made it, and give it to the great public machine whose chief and sufficient duty is to maintain civil order.

Mr. Ramsey, of Minnesota, yesterday introduced in the Senate a bill preparing the way for this extension of the functions of Government. It proposes to incorporate nineteen citizens as the "United States Postal Telegraph Company," with whom the Postmaster-General shall contract for the carriage of fast letters at moderate rates, between such stations as they may choose to establish; the Government to provide them with offices, to receive and distribute the despatches for them, and, after five years, to buy the lines, if it wants them.

The bill gives the Postmaster-General no power to require the company to build any lines save at their own discretion. Of course, if it should pass, they will build them from New York to the principal cities; and, hav-

ing no rent to pay, no messengers to employ, and no expense anywhere beyond the mere maintenance and operation of their lines, they will make large profits, even at the low rates provided. If they spend their profits in making new lines through the country, which cannot support themselves, they are not the men we take them for.

But no plan which mixes up the private business of a corporation with the public service can possibly be free from similar objections. No company will undertake such a work unless sure of getting some advantage which a merely private business will not yield; and this advantage must needs be a tax on the people. If the Government reserves the right to take the whole property hereafter, the temporary advantage granted must be all the greater; and the loss to the people, therefore, greater too. Besides, under the scheme supposed, no fixed responsibility for good service will rest anywhere; the company and the post-office will perpetually shift blame upon one another, and their bewildered patrons will only be led to denounce and despise both.

Such a system embodies every defect, practical and theoretical, both of great corporations alone and of Government competition with private enterprise. But if it were free from reproach on other grounds, the unquestionable fact that, of all the great interests of the country, the telegraph business, under private management, is already one of the most satisfactory and beneficial, and that whatever can be done tolerably by private associations is always injured by Government meddling, ought to satisfy Congress to keep its hands off in this case. When our legislators shall have some conception of the proper duties of Government, and of the necessary limits of its functions, there will be much greater hope than now of having those duties and functions respectfully performed.—*N. Y. Evening Post*.

New Application of Electricity.

SAYS the London *Musical World*: "Some Parisian electrician has developed a brilliant idea. He electrifies singers just before they 'go on,' and they electrify the audience. They sing with spirit, energy, fire—all derived from the battery, at so much per shock. Thus the work of the manager becomes simple; as he depends for light on the gas company, he will henceforth depend for the life and vigor of his operas on some new electrifying company, contracting to do the work nightly. Vocal genius will be laid down in wires, and turned on or off, as required—the charge, so much per Grisi-power. If the singers do not sing well the gallery will know that the manager is stingy or has no funds; or that, through a dispute with the company, the electric supply is cut off. But if it is true—if brilliant singing can be bought for cash—why not extend the principle? Could not sublime and startling oratory be distributed in 'mains' all over the land with connecting pipes, and, of course, meters to every town hall and assembly room? Could not even a hostess secure a certain amount of electricity to enliven a dull dinner party—just as now she secures table ornaments and buys flowers? And, before all and above all, could not the 19,995 dull pulpits in the land—the total number of pulpits being 20,000—be electrified, so that the plague of sleepy sermons might finally be exorcised?

The Telegraph on the Isthmus.

WE publish, in our issue of to-day, an application presented to the Government by Mr. Stanley McNider, on behalf of Señor Paz Soldan, for permission to land a telegraph cable on the shores of this bay, and the highly favorable answer returned by President Corrozo to the request. The privileges which Señor Paz Soldan requires in return for the very important work he proposes

to carry out are very trifling. And so, apparently, the President has considered, for he has accepted the proposition without the least alteration, and has, moreover, forwarded the documents to the Government of the Union, and to that of the State of Cauca the propositions requiring to be submitted to the latter State, as the line will touch at Buenaventura, a port within its limits. Señor Paz Soldan binds himself to complete the line within two years, and no doubts need be entertained of the fulfilment of the contract within even a shorter period than is stipulated. The contractor's interests, as well as those of the Pacific Republics, would urge him to terminate the work as speedily as possible, so as to have the cable ready to commence operations simultaneously with that which is about to be laid to Aspinwall.

Within the present year we may expect that Panama will be placed in direct communication with the United States and Europe by the cable of the West India and Panama Telegraph Company, which is now being constructed in London, and which will connect the cable already laid to Cuba with Jamaica, whence it will be continued on this Isthmus.—*The Panama Mail.*

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion.

No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., Feb. 17th.

TO THE EDITOR OF THE TELEGRAPHER.

NOTHING has been done in either House of any importance, telegraphically, since my last communication. Congress is too much engaged, just now, with other matters, to devote attention to telegraph interests.

Mr. Washburn's committee has done nothing as yet—that gentleman is waiting, before proceeding with his proposed investigation, until he can get through the House the resolution authorizing the Committee to thoroughly investigate the conduct of the several lines, and to send for persons and papers. Although the House was willing to grant the special committee asked for by Mr. Washburn, the members generally appear to attach but little importance to, and feel little interest in, the matter. The thorough examination of the subject, and the able adverse report of the Committee on Post-offices and Post-roads of the last Congress, makes further progress with these government telegraph schemes very difficult now. Congress realizes the fact that the people imperatively demand economy in public expenditures, and a reduction of taxation; and schemes like that of Mr. Washburn, involving the needless expenditure of tens of millions of dollars, meet with little favor or countenance.

Mr. Orton, the President of the Western Union Company, arrived here on Thursday of last week, and has been in conference with the members of both Houses and Government officials.

It is understood that Mr. Samuel Ward is also working in the interest of the Western Union Company. Mr. Ward is well known as a lobbyist, and is at the Capitol constantly. There is not the slightest doubt but that even if the postal telegraph scheme should succeed, either as a government telegraph or through the monogrel concern of Ramsay and Hubbard, the interests of the Western Union Company would be duly cared for.

Mr. D. H. Craig has also been here in conference with the members of Congress. I understand that he is trying to convince the postal telegraphers that the National line and Little's Automatic Instrument will be just the thing to start with as a basis for a government line.

Mr. Gardiner Hubbard is here, of course, and all hands are at work consulting and plotting with Mr. Washburn, in order to get their individual schemes endorsed by his Committee. All are agreed that the Treasury should be bled, but the present economical disposition of the House, and the watchful guardianship of Mr. Dawes, render the operation one of great, if not insurmountable difficulty.

The long communication from "Island," in last week's TELEGRAPHER has attracted considerable attention here. His argument, that a postal telegraph will ensure cheap telegraphing, is very good as far as it goes, but the question is whether the benefit in this respect will not be more than counterbalanced by the disadvantages attending it. In the first place there must be a great delay in the transmission of business. The opening of many new offices—for, with a telegraph system whose expenses are defrayed from the public treasury, every little village will demand telegraphic accommodations—and the general red tapeism which characterizes the transaction of Government business cannot but be fatal

to speed in the transmission and delivery of telegraph communications.

Every telegrapher, I think, will agree with me that a very large proportion of those who use the telegraph consider speed of greater importance than the amount charged for the service rendered. In many cases an hour's delay will entail heavy loss, and for this, with a Government telegraph monopoly, there would be no means of obtaining compensation or redress. There are other equally important and strong arguments that might be and have been urged against the measure, in the interests of the public, but the most important question to the practical telegraphers in connection with the matter is as to how the change, if made, will affect them personally. Neither "Hyacinthe" nor "Island" have demonstrated that, with a Government monopoly of the telegraph, the telegraph employes will find their condition in any way improved. On the contrary, there are many ways in which it would injuriously affect them. In the first place, a large number of important offices would be closed, and many thus lose good situations which they now hold. Again, there being no competition in the business, and the Government suffering a heavy loss in conducting it, as must necessarily be the case, the cheapest operators would be employed, except in a few of the most important offices. The provision in Mr. Washburn's bill that removals should only be made for cause, even if it became a law, would be practically inoperative, for if for political reasons it became desirable that a situation should be made vacant, there would never be found any difficulty to find a cause to turn out good operators even, to give places to favorites and political wire pullers; and finally, the telegraph would unavoidably become an immense electioneering machine, and be used for other purposes equally as bad and dangerous.

But if we must have a postal telegraph, let it be established solely as a Government institution. That would be preferable to the hybrid scheme so persistently engineered by Mr. Hubbard, and which the Senate Post-office Committee have endorsed with so little consideration.

CAPITOL.

Westbrook's Automatic System.

TO THE EDITOR OF THE TELEGRAPHER.

AS my communication in THE TELEGRAPHER of Jan. 29 has elicited a reply from Mr. D. H. Craig, I ask the favor of space in your paper for a brief rejoinder.

In the transmission of messages automatically no new feature has been introduced by Mr. Little. In the preparation of matter for transmission a new punching machine is used, which, it is claimed, can be worked at the rate of 800 or 900 words an hour. By my system more than double that rate of speed is accomplished in preparing the strips, and the same speed in transmission is attained as by Little's system. I, therefore, reiterate that my method has obvious advantages, which cannot be approached by any other yet invented.

One of the specialties of my system consists in the entire practicability of relaying from the strip. Up to a speed at which messages can be recorded by the Morse process they may be re-transmitted from point to point indefinitely, one composition sufficing. This cannot be done by Little's or any other automatic process. Whenever it becomes necessary to relay, they must re-compose their messages by the slow punching process; and if they are composed, copied, and re-composed by the kind of cheap labor which Mr. Craig proposes to employ—young girls, and even children—we may imagine, but cannot undertake to describe, the metamorphosis which a stock report, for instance, would be likely to undergo.

A simple line of 250 miles in length, such as is now being built to test Mr. Little's invention, will present favorable conditions for working an automatic system; but when lines and circuits come to be multiplied and extended, to accommodate general business, a different set of conditions will be encountered. Under these latter conditions only can the merits of the respective systems be fairly tested.

The assertion that Prof. Morse has stripped me of the credit of my invention is entirely at variance with the facts. He nor no one else has asserted or claimed that the Morse embossed strip was ever used as a means of automatic transmission until I accomplished it. True, Prof. Morse now claims to have "suggested" something of the kind about a quarter of a century ago, in a letter to Alfred Vail but it never saw the light of publicity, and, whatever it may be, can in no wise affect my claim. Prof. Morse, in his recent report, says of my system:

"This mode requires no type setting, no new instrument for preparing the paper, no new process of punching paper to be learned by the operators. The operator prepares his despatch in the usual way by embossing the paper, as if sending a despatch. It is then at once ready for transmission, needing no perforation nor other preparation. The paper strip, with the embossed characters,

is simply passed beneath a delicate lever, like that of the relay magnet. As every embossed part passes under the lever, contact is made longer or shorter according to the length of the embossed line. The result is the same as by the type process and the punched paper process."

In this endorsement Prof. Morse describes the instrument and process I exhibited and explained to our good friend, J. D. Reid, of the *Journal of the Telegraph*, and also to others, in the spring or summer of 1868.

It is well known in telegraphic circles that for twenty years past efforts have been made by different inventors to perfect punching machines for preparing strips. Is it to be supposed that Prof. Morse was all this time oblivious of this fact? If he had a perfected system, such as above described, and which he pronounces the best yet devised, would he have buried it in the Catskill mountains for twenty years or so, by way of giving it age, or rather would he not have entered it years ago for the automatic race, and secured his claim by letters patent, as I have done?

C. WESTBROOK.

The Telegraph in Canada.—A Discouraged Plug-Personals.

PARIS, ONT., January 23d.

TO THE EDITOR OF THE TELEGRAPHER.

PERHAPS a few words from this section may find favor with some of your readers. Although items are scarce, I will endeavor to scare up something to let the world telegraphic know we are still in existence north of the 49th parallel. Before hard weather set in the contracting parties, superintended by A. Kennedy, were active building new lines and stringing new wires, to accommodate the increasing business of the Montreal Company. A new thorough wire from Toronto to Detroit, over the G. W. Ry., connecting Montreal with all points west, has been built, to the great gratification of our *fast* men, who do not like being disturbed with 17 R. R. Besides this a perfect network of wire has sprung up, connecting unheard-of hamlets to the business centres of our prosperous dominion. Of course there is an object in this, but whether it will be the means of discouraging would-be telegraph speculators remains to be seen. Tariffs are as low as they can be and be at all remunerative. As yet there are no signs of an intention to cut down salaries. Perhaps the action of the Franklin Company's operators has had its effect. The Dominion Company does not appear to flourish as well as it might. Its stock seems to be down, so far down I fear it will never rise again.

Plug factories are in abundance all over the country, holding out great inducements to the verdant ones to come and see the elephant. Hundreds, holding diplomas as first class operators, are drifting about seeking employment. If they would turn their attention to the plough, or some other suitable work, it would afford them a better prospect for obtaining a livelihood.

I was much amused the other day by an applicant for a telegraphic situation, who, by the way, would have looked better swinging an axe or pick. He came stalking into my office while I was busy receiving some messages, saying "good day." I answered him, and when at leisure he wanted to know what the prospects were for a job. I told him they were good if he was fit. He said he rather thought he was able to run an institution like this, and presented me with his diploma. Thinking to have a lark I professed to be able to give him what he wanted, and would take him on trial at once. Of course he felt proud, and I set him to work. He sent very fairly. I stepped out of the office for a few minutes, and on my return found him in a perfect lather (the day was cool), his hair on end, pencil in hand, and some horrible jumble on the paper before him, with two keys that were near him open, and his eyes savagely fixed on the sounder before him, that was rattling away at the rate of thirty words a minute. He was completely nonplussed. On listening for a moment I ascertained it was the afternoon press report. It ceased. I asked him if he had got it, he said, No-o-o-o. "What are these keys open for?" "To stop the d—d wires." I looked daggers; he sloped, to cool his fevered brow over the way, and that was the last I saw of him. I have not heard the last of my assistant yet. A few days ago we had St. Paul, Minn., and Toronto working quite amicably; circuit good, but Curry is not to be stuck.

I may be able to advise you of some changes in my next, but as it is now Mr. T. J. Waugh is Superintendent of G. W. R. Telegraph and chief despatcher, with a good staff under him, viz.: Messrs. W. and J. Blair, T. Robinson, A. Lester, G. Fraser, J. Frederick and Ned McNairn, who all profess to know a thing or two as to moving trains. Mr. W. M. Goodwin "bosses" at Hamilton Station with T. J. Oakley; Dickey Farrell at London; O. Byrne at Windsor, and the veteran Charley Hall at Suspension Bridge hold their own against all comers. Mr. Given still presides at G. O. Mr. Fenton keeps the boys straight on the Buffalo and Goderich road, assisted by

Mr. Thorn. Mr. Ewen Cameron sees his friends at Brantford. Mr. Geo. W. Railton, who is "settled," does his duty at the Burg.

I notice in last week's paper that Mr. Joe Anderson, of "Bu," has found his mate. May joy be theirs, but Joe you must not forget Georgia.
Enough for once.

ST. REGIS.

The Strike in California.

SAN FRANCISCO, Feb. 2d.

TO THE EDITOR OF THE TELEGRAPHER.

KNOWING the California boys will be much censured for their premature action in the late "strike," I take upon myself the duty of exonerating, as much as possible, the Pacific Coast. When the operators in San Francisco were discharged no action had been determined on; a meeting was to have been held on the following Sunday. Immediate action was urged by many, but better judgment prevailed, and it was determined to wait until the meeting, as several urged the necessity of a month's time, in order to further effect organization, and acquaint all circuits with the state of affairs. Mr. Gamble, General Superintendent, had already visited Marysville, and discharged an operator on the supposition of his being a member of the League. He then proceeded to Sacramento, and the action he took in that quarter you are already acquainted with. When San Francisco operators heard of this they unanimously refused to continue work unless those operators were reinstated. Upon good authority I learn that it was Mr. Gamble's intention of next proceeding to Virginia City, Nevada, and doubtless the same action would have taken place in that quarter, and ere the month had passed there probably would not have been a member of the League employed by the W. U. Co. on this coast, for it was their intention to import fresh operators.

Now, I ask, could we submit to any such proceedings? There was but one way to avert the strike, and that was by the members of the League pledging themselves to violate their oath. Would any just man ask this? We very much regret that so many good men have been thrown out, and sincerely hope they will all find other and more lucrative employment, and never have cause to regret their action.

Your valuable paper is earnestly looked for, and doubtless you have noticed a large increase in its circulation on this coast.

IXION.

Obituary.

SHEFFIELD, ILL., Feb. 9th.

TO THE EDITOR OF THE TELEGRAPHER.

It is with sorrow that I announce the death of Mr. S. H. Hughes, who died of consumption at his home in Chicago on the 4th inst. Mr. Hughes had charge of the night office in this place for four months, during which time he won the respect and esteem of all who became acquainted with him. About the middle of January he was promoted to a day office at Malcolm, Ill., but his constitution was impaired by the insidious disease, and his strength was so much reduced by the labors of the position which his talents, energy and devotion to business had won for him, that he was obliged to give it up and return to his home in Chicago. He has gone from among us leaving a large circle of mourning friends, to whom his memory will ever be precious.

LEW. M. SEAVER.

PERSONALS.

Mr. A. G. TAYLOR, of the Western Union, Elizabeth, N. J., office, has been transferred to the Wilmington, N. C., office of the same company.

Mr. C. H. WALTER, of the New York main office of the Western Union Company, succeeds Mr. TAYLOR as manager of the Elizabeth, N. J., office.

Mr. E. L. PARMELEE, formerly of the Western Union St. Louis office, has accepted a position at Springfield, Ill., with T. W. & W. Railway.

Mr. C. F. WILLIAMS, of Nebraska City, Nebraska, desires the present address of Mr. FRANK L. ROBERTSON, who left Bitter Creek, Wyoming, U. P. R. R. office, about June 1st, 1869.

Mr. E. M. STULL has been transferred from St. Louis to Jefferson City, Mo.

Mr. H. K. CLARKE, of the P. and A. office at St. Louis, takes the place vacated by Mr. STULL.

Mr. WALTER BRANNAN has been transferred from the California to the night office at Jefferson City, Mo.

Mr. R. J. HEWITT, from Pleasant Hill, takes the office at California, Mo.

Mr. H. JONES, night operator at Hermann, takes charge of the Pleasant Hill, Mo., office.

Mr. H. L. BIGGS takes the night office at Hermann.

Mr. ROCK GREEN, from Bloody Island, has been appointed night operator at Tipton, Mo.

Mr. SAMUEL A. JOHNSON, "Extra," has been appointed night train despatcher of the Eastern division.

Mr. F. J. HOWELL, formerly of the Louisville, Ky., office of the L. & N. R. R., has accepted a situation with the Cincinnati and Indianapolis Junction Railroad, at Indianapolis, Indiana.

Mr. W. S. RADCLIFFE has been transferred from Burnett Junction, Wis., to Minnesota Junction, Wis., as agent and operator for the C. and N. W. R. R.

Mr. PAUL W. BOSSART has accepted the management of the Franklin Company's Brokers' office, at No. 37 State street, Boston, Mass.

THE TELEGRAPH.

(By Atlantic Cable.)

THE TELEGRAPHIC TROUBLES.

LONDON, Feb. 10th.—In the House of Commons the Marquis of Hartington, the Postmaster-General, explained that the confusion in the telegraphic service was due to the inexperience of the new employés, the bad state of the weather, and the sudden increase of business. He implored the public to have patience, as the trouble was temporary.

THE INDIA CABLE.

LONDON, Feb. 11th.—The shore end of the India telegraph cable, taken out by the Great Eastern, has been landed at Bombay.

HOW A GOVERNMENT TELEGRAPH WORKS.

LONDON, Feb. 16, 1870.—The new telegraph system is hardly in complete working order yet. Complaints of delay are still numerous. The usual channels for messages have been temporarily closed in some instances, and in this city a great number of despatches must first be forced through a pneumatic tube half a mile to the Post-office before they get on the wires.

FOREIGN TELEGRAPHIC NOTES.

THE *Mechanics' Magazine* (London) says: "A rumor has been current to the effect that the Anglo-Mediterranean Company were about to abandon the line they possess through Italy, from Mollica, in Sicily, to Susa, on the Franco-Italian frontier. This is simply absurd, as the line is maintained in excellent working order, and is now most valuable for the rapid transmission of messages from Egypt to England. When the Falmouth, Gibraltar and Malta cables are laid, messages for England will undoubtedly pass by the new route; but, at the same time, it must be remembered that the land line referred to must carry all the Continental traffic, which will be most considerably increased on the completion of the various extensions to China and Australia."

The manufacture of the West India Cable is progressing satisfactorily at Silvertown. Some of their new machines have been set to work, and fully answer the expectations formed of them. Shipping will commence in a few days. The twin screw, Suffolk, 1,000 tons, has been purchased, to turn into a repairing ship for the various West India cables. She is now being fitted with tanks, and will proceed to New York, where she will be fitted up with cable machinery belonging to the International Ocean Telegraph Company, used at the operations connected with the Cuba cable.

Petitions have been presented for the winding up of the United Kingdom Telegraph Company, in consequence of the purchase of its lines by the British Government. A petition has also been presented for the winding up of the Bonelli Telegraph Company.

It has been decided by the Australian Government to reduce the cost of telegrams within the colony, from January 1st, to one shilling for twelve words, and one penny for every additional word. It is hoped that this change will, in the course of two or three years, bring in not only as much revenue as now, but a great deal more.

Mr. Allan, an original promoter of the United Kingdom Telegraph Company, has advanced claims against it, amounting, with contingencies, to £6,000, and has obtained an injunction in Chancery, compelling the Company to reserve £25,000 of assets till the case has been heard.

The French Cable Company have notified that their annual general meeting will be held at Paris on the 21st of February, to declare a dividend, and that it will be made special, to confirm the agreement with the Anglo-American and Newfoundland Companies, and also for the purpose of concluding arrangements with the French Government with regard to the relations between the

company and the French and American Governments. The British Australian Telegraph Company (Limited) have given the order for the manufacture of their cable—to be laid between Singapore and Batavia, and Java and Port Darwin, Australia—accompanied by the necessary payment to the Telegraph Construction and Maintenance Company (Limited).

The Telegraph Construction and Maintenance Company have received the order, accompanied with the necessary payment, for the manufacture of the cable for the British Australian Company. This cable will be laid from Singapore to Batavia and Java, and from there to Port Darwin, in Australia. The Construction Company are now busily engaged with the completion of the manufacture of the Falmouth, Gibraltar and Malta, and the Ceylon and Singapore cables. They will, in all probability, shortly commence the manufacture of the China and Australian cable.

Presentation.

MR. T. J. WAUGH, late superintendent of the telegraph department, G. W. R., was presented with a handsome gold watch and chain (accompanied by an address) by the operators of the department. London being at present the headquarters of this department, the proceedings took place there, and a large number of operators were present. Mr. Showerman, the present superintendent, kindly granting permission to all who could make it convenient to attend. The address was accompanied by the presentation of a very handsome gold watch and chain, with the following inscription beautifully engraved: "Presented to T. J. Waugh, Esq., by the telegraph operators connected with the Great Western Railway, January, 1870." The whole affair was of the most interesting nature, and Mr. Waugh has reason to feel proud of this spontaneous mark of respect on the part of those whom his uniform kindness and urbanity have strongly attached to him. The following is the address:

LONDON, ONT., Jan. 31, 1870.

T. J. Waugh, Esq.

DEAR SIR—The operators connected with the telegraph department of the Great Western Railway deeply regret to learn that you have retired from the company's service; and in view of the mutual good feeling and pleasant relations that have always characterized our intercourse with you, and the praiseworthy interest you have always manifested in our welfare during the six years you have filled the important position of Telegraph Superintendent, we feel that we cannot allow you to part from us without giving expression to the feelings of respect and esteem we entertain for you.

Under your management, sir, many important improvements have been effected, and the efficiency of this department greatly increased in every respect, which gives us confidence, in parting with you now, that the same energy and ability you have on all occasions heretofore displayed will enable you to attain, and efficiently to fill a position even better than the one you now resign. Accept, dear sir, of this testimonial, as a slight indication of our regard for and continued interest in you; and as you will long live in our memories, we, in saying good-bye, respectfully request an abiding place in yours.

Signed, on behalf of the Committee,

JAMES BLAIR,
Secretary.

MR. WAUGH'S REPLY.

GENTLEMEN—Allow me to thank you for this handsome testimonial, it being but another mark of your esteem in a form more substantial than words, illustrating that good feeling which has ever existed between the operators of the Great Western Railway Company and myself. It matters not where my lot in life is cast, this beautiful memento of your good wishes will ever accompany me, and as it records the fleeting moments of the future, may it never note one that will cause me to forget the many warm friends I leave behind, connected with the Great Western Telegraph Department.

T. J. WAUGH.

New Patents.

For the week ending Feb. 1, and each bearing that date.

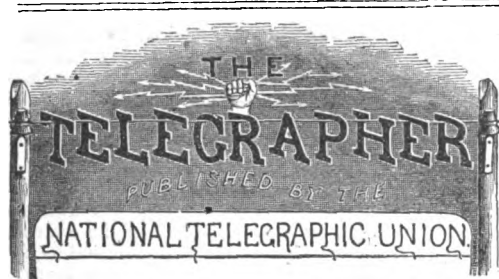
No. 99,386.—ELECTRIC CLOCK. Elisha Wilson, New York, N. Y. Claim.—1. The arrangement, as shown and described, of instrumentalities, whereby the electric impulse is applied to the pendulum after it has reached the limit of its arc, when its backward movement is begun, all as set forth.

2. The slide J, provided with two disks, b b', one of which is a conductor and the other a non-conductor, and caused to operate upon the conductor K, at the time and in the manner described.

3. The vibrating conductor K, arranged between the slide J and cap F, as and for the purpose specified.

4. The conductor K, in combination with the circuit slide and the pendulum adjustment of the pendulum, without disturbing the electrical action, substantially as herein set forth.

5. The adjustable knife edge, in combination with the pendulum, substantially as herein described, for the purpose of an electric clock.



SATURDAY, FEBRUARY 19, 1870.

J. N. ASHLEY.....Publisher and Editor.

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THE CALIFORNIA TELEGRAPH STRIKE.

WE published last week a communication from three California telegraph operators, not members of the Telegraphers' Protective League, in regard to certain statements, editorial, and of correspondents, relative to the asserted treachery of Mr. SAWYER, and denying that MUMFORD and GAMBLE were aware of the existence of the League previous to the strike.

The three gentlemen to whose communication we refer we know to be honorable and reliable, and as far as their personal knowledge extends, their statements are entitled to confidence.

In the absence of any definite evidence of the truth of the charges against Mr. SAWYER we accept their statement, and retract what we formerly said in reference to him. At the same time there seemed to be sufficient evidence that somebody had betrayed, not only the existence, but also the purposes of the League, and as Mr. SAWYER had withdrawn from it after having been fully initiated, it was but natural that those with whom he had been associated should deem him guilty of the treachery with which he was charged.

In reference to the other statement, in regard to the absence of any knowledge of the existence of the League on the part of the Western Union officials in California, while we accord to our correspondents belief in the correctness of their statements, we think the evidence to the contrary is too strong to warrant our concurrence therein.

We publish this week a communication from another California correspondent, who ought to know the facts, distinctly reaffirming the statement that those officials *did know* of the existence and purposes of the League, and went to work systematically to get rid of those Western Union employes who had connected themselves with it; and further, that it was their intention, as soon as possible, to fill the places of all League members with new operators, to be brought from the East. These statements agree with all the information we have received in regard to this matter, and we are of the opinion that they are substantially true.

We have little doubt but that the managers of the Western Union Company did have information of the existence of the League, not only on the Pacific coast but in the Eastern States. They were not probably aware of the *extent* of the organization, or how generally the employes of the company were connected with it. There is abundant evidence that General Superintendent STAGER had obtained, through the treachery of a Chicago member, a copy of the constitution, and some knowledge of the membership of the League, and it is not reasonable to suppose that he would neglect to inform his associates of a matter of such importance. Having this knowledge, it was essential that the extent and power of the League should be developed with as little delay as possible; and from its distance from the main portion

of the Western Union lines, and from the absolute telegraphic monopoly enjoyed by that company in that section, California was deemed, as it proved, the most feasible point at which to commence operations for that purpose.

Cut off, as they were, from communication with the officers of the League, and angered and indignant at the arbitrary and hostile action of MUMFORD and GAMBLE, it was unavoidable perhaps that our San Francisco brethren should act as they did, and call upon their *confreres* at the East to sustain them in their resistance to the attempted tyranny. It is useless now to discuss the propriety or advisability of the action which the Western members of the League felt bound to take under the circumstances. The strike took place, and its unfortunate results are too well known. There is no doubt but that all concerned were governed by what they considered their obligations in the premises. That it failed was due to the fact that hostile action was forced upon the League before it was completely organized, as it would have been in a few months more. The rapid increase in members, power and efficiency of the League, would soon have enabled it to maintain the rights of its members, and secure justice and fair treatment to all, without the necessity of resorting to extreme measures.

The American Compound Wire.

THE Compound Telegraph Wire, although it has been before the public but about two years, has proved itself so much superior to the old galvanized iron wire for telegraphic purposes, as to rapidly supersede it. The principal advantages afforded by this improved telegraphic conductor we have very fully set forth heretofore. They are lightness, relative tensile strength, conductivity and durability. A compound wire, having a conductivity equal to No. 5 iron wire, will weigh but 160 pounds to the mile, while No. 9 iron wire will weigh more than 300 pounds to the mile. As a consequence the number of poles used is largely reduced, thus lessening the points of contact and chances for escape of the electric current.

This compound wire possesses another advantage, of which little has heretofore been said, but which, in exposed localities, is likely to prove of much importance. Owing to its uniform smoothness of surface, sleet and ice do not accumulate upon it as upon iron wire, and consequently a line constructed with compound wire will stand through storms which would prostrate the most substantially built lines of iron wire.

The Atlantic and Pacific Company, under the superintendence of Mr. M. L. WOOD, early appreciated the advantages of the compound wire, and was, we think, the first to use it to any extent. This company has used several hundred miles of the wire.

The Great Western Telegraph Company has used the compound wire exclusively in the construction of its lines, and is now extending its wires to Omaha, Nebraska. The superintendent and managers of the Great Western Company speak in the highest terms of the quality of this wire and results from its use. The wires are always in good order and reliable, and have this season stood up against storms which have prostrated other lines through the same section of country.

The Atlantic and Pacific States Company, in California (since absorbed by the Western Union), used this wire for a portion of its lines, and a good deal has been sent to the Pacific, to be used in the construction of private lines.

The Pacific and Atlantic Company has also recently commenced using compound wire, and the National Company, which is now engaged in the construction of a line between this city and Washington, D. C., have, after careful examination and investigation, adopted it exclusively. The latter company are putting up a wire whose conductivity equals No. 5 gauge of iron wire. This weighs but 160 pounds to the mile, while iron wire of equal conductivity would weigh 651 pounds to the mile,

and would require at least 40 to 50 poles to the mile to sustain it—the National Company with the compound wire using only fifteen.

Over 500 miles of the compound wire will be used in the construction of the new Fire Alarm Telegraph in this city, of which over 300 miles have been already strung.

The Financial and Commercial Telegraph (the new gold and exchange quotation line) use compound wire exclusively, and with the best results.

From this sketch it will be seen how rapidly this new conductor is superseding iron wire for telegraphic purposes. In fact, it is now used almost exclusively by all engaged in the telegraph business, except the Western Union Company, and it has been suggested that two reasons have hitherto prevented that company from adopting it—one, because no high official is interested in the patent or manufacture, and the other, that it is really too superior an article to meet with favor from the managers of that company.

From the Bed of the Mississippi.

WE published last week a despatch from the chief engineer of the Illinois and St. Louis Bridge Company, sent by telegraph, from sixty feet below the surface of the river, to the Eastern stockholders. Quite a celebration took place upon the inauguration of telegraphic communication, and a number of ladies and gentlemen, including Mr. C. H. HASKINS, Superintendent of the Pacific and Atlantic Telegraph Company, Mrs. C. H. HASKINS, with several other ladies and a number of gentlemen, descended the shaft in the caisson to the bottom of the river.

The telegraphic arrangements are said to have worked admirably. The materials for the work, reel boxes, lightning arresters, etc., were furnished by BLISS, TILLOTSON & Co., of Chicago, and manufactured under the supervision of Mr. GOODYEAR, of that firm. The work at the caisson and the telegraphic communications have been done under the direction of Mr. C. H. HASKINS.

A Telegraphic Mother.

WE have heard of a very amusing occurrence in the ladies' department at No. 145 Broadway, a few days since, when the mature and malevolent manageress, Miss SNOW, was so astounded at the ingratitude and "imperence" of one of her young ladies, who proposed to leave rather than submit to her impositions, that she called Mr. ECKERT, the General Superintendent, to assist her in lecturing the refractory young woman. His feeling reproaches to the young women employed there at their want of consideration for the *motherly* care bestowed upon them by their *amiable* manageress are said to have affected them to tears—from suppressed laughter. If we can find room for it hereafter we shall publish a full and particular account of the affair.

Answer Requested.

WILL Mr. CHARLES E. HIGDEN, of the Western Union office at Cincinnati, Ohio, please answer our letters, without obliging us to make any more definite reference to the matter through the columns of THE TELEGRAPHER?

Wanted,

the present address of O. C. HATTON, formerly of Pennsylvania. He will hear of something to his advantage by communicating with the Editor of this paper. Any one knowing his whereabouts will confer a favor by advising us.

AN exclusive concession has been granted by the Spanish Government to Messrs. Graham & Hean, of London, for forty years, for a submarine cable from Manila to Hong Kong and Singapore; and for a telegraph system for the whole of the interior of the island of Luzon; also, for all the communications from the island of Luzon to the whole of the other Spanish possessions in the Philippine Islands.

Recent British Patents.

Patents on which the stamp duty of £20 has been paid.
No. 220.—CHARLES WHEATSTONE, 19 Park Crescent, Portland Place, London.

Improvements in electric telegraphs, and in apparatus connected therewith. Dated 28th January, 1867.

Patents on which the stamp duty of £100 has been paid.

No. 3,453.—CHROMWELL FLEETWOOD VARLEY, Fortress Terrace, London.

Improvements in electric telegraphs. Dated 26th December, 1862.

No. 3,587.—WILLIAM ALFRED MARSHALL, Canonbury.

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No. 3,620.—WILLIAM ROBERT LAKE, Southampton Buildings, London.

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11 DEY STREET, NEW YORK.

AND

BLISS, TILLOTSON & CO.,

171 SOUTH CLARK STREET, CHICAGO, Ill.,

Respectfully inform their Customers, and all parties purchasing

TELEGRAPH AND ELECTRIC MATERIAL,

that they have been appointed by S. C. BISHOP, successor to the

BISHOP GUTTA-PERCHA COMPANY,

OF NEW YORK,

GENERAL AGENTS for the sale of any articles manufactured by him for

TELEGRAPHIC AND ELECTRIC USE.

They are now prepared to fill promptly any orders for goods on hand, or to be manufactured, at the *Manufacturer's prices in New York.*

The long experience of Mr. SAMUEL C. BISHOP, in the manufacture of

PURE GUTTA-PERCHA GOODS,

and the reputation he has gained and enjoys for the superior quality and perfection of manufacture of

SUBMARINE TELEGRAPH CABLES

AND

INSULATED WIRES

of various kinds, insulated with

PURE GUTTA-PERCHA,

renders this arrangement a very important one for our numerous patrons throughout the country, and we confidently recommend these goods to their especial notice as being

FULLY EQUAL, IF NOT SUPERIOR,

to any other in use.

THE PRINCIPAL ARTICLES manufactured and offered for sale are

SUBMARINE TELEGRAPH CABLES,

(Any size required).

Gutta-Percha covered Telegraph Office Wire, in great variety of size and style.

SUBTERRANEAN WIRES, covered with Gutta-Percha and Lead outside, various sizes.

SUBTERRANEAN WIRES with Gutta-Percha and braided fibre, and BISHOP'S PATENT COMPOUND outside.

SUBTERRANEAN WIRES, with Fibre and Bishop's Patent Compound outside.

POLE LINE CORDAGE, with Fibre, and Bishop's Patent Compound outside.

BRIDGE'S Patent Electric Cordage.

BRIDGE'S Patent Double Covered Cordage.

BISHOP'S PATENT COMPOUND WIRE,

for out-door use and office connections.

INSULATED WIRES,

with two Conductors, both plain and with braid outside, and a great variety of other kinds made to order.

COTTON AND SILK-COVERED WIRES, both twist and braided.

This arrangement,

TOGETHER WITH OUR OWN

EXTENSIVE MANUFACTORY in NEW YORK,

and our great variety of TELEGRAPH MATERIAL in stock, fully establish our claim that our stores are the

DEPOTS OF TELEGRAPH SUPPLIES in THIS COUNTRY.

MODERN PRACTICE OF THE

ELECTRIC TELEGRAPH.

By FRANK L. POPE.

PRICE.....\$1 50.

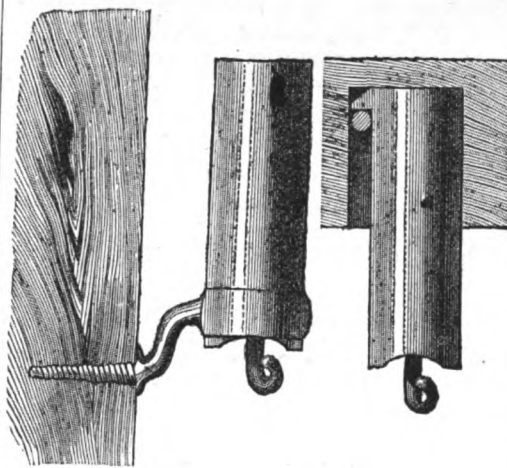
We will furnish the above work, together with Prof. J. E. SMITH'S MANUAL OF TELEGRAPHY, upon receipt of the price of the former.

L. G. TILLOTSON & CO.,

11 DEY STREET, New York.

BROOKS' PATENT PARAFFINE INSULATOR WORKS,

21 ASPEN ST., North of 2123 CHESTNUT ST., PHILADELPHIA.



This Insulator shows a resistance of 100,000,000,000 B. A. Units, excelling ordinary Insulators in humid weather fully one hundred thousand fold.

Its great strength and durability make it the most economical Insulator in use.

Every report received from them is of the most favorable character.

ESTABLISHED 1842.

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COVERED WIRES,

made from Lake Superior Copper, warranted strictly pure, covered with Hemp, Flax, Linen, Cotton, Silk or other material, for Telegraph Instruments, Electro-magnetic Machines, Philosophical Apparatus, and all kinds of

Electrical Purposes.

Also, PLAIN, WOVEN, BRAIDED, ENAMELLED, SHELLACED, PARAFFINED, and all kinds of

TELEGRAPH OFFICE WIRES,

Also, Telegraph Switch Cords,

many Patterns, Plain, Woven and Braided. Parties being partial to any particular kind need only enclose a small specimen in letter, and it can be imitated in every particular.

CONDUCTING CORDS, POLE CORDS, TINSEL.

C. THOMPSON,

(SUCCESSOR TO JOSIAH B. THOMPSON,)

29 North 20th Street, Philadelphia, Pa.

KNOX & SHAIN,

ESTABLISHED IN 1850,

MANUFACTURERS OF

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ENGINEERING INSTRUMENTS,

No. 716 CHESTNUT STREET, Philadelphia.

(Two Medals Awarded by the Franklin Institute.)

Would caution Telegraph Companies who want our well-known Premium Registers, with all our various improvements upon them, that there is a very good imitation (in appearance only), but none genuine unless they have our names and number upon them.

EDMANDS & HAMBLET,

Electro-Magnetic and Magneto-Electric Inventors and Mechanicians.

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They manufacture Electric and other Fine Machinery to order. Their Special Inventions are:

The Electro-Magnetic Watch Clock, which is the best Watchman's time recorder in the world.**The Telegraphic Gas-Holder Gauge,** which constantly shows at the works the quantity of Gas in the Holders.**A System of Many Clock Dials,** controlled electrically by one Standard Timepiece.**An Electric Vane and Register,** which shows within doors the direction of the wind at all times.**A Magneto-Electric Alphabetical Dial-Telegraph.**

The Best and most Economical for Private Business and Railroad purposes, requiring no voltaic battery.

THEY SOLICIT ORDERS FOR

Chronographs, and Astronomical Clocks, Regulators, &c., &c.

DR. L. BRADLEY,

AT NO. 7 EXCHANGE PLACE,

Jersey City, N. J.,

Keeps constantly on hand and for sale his

Improved Telegraph Instruments.

Having adopted the use of

OREIDE METAL,

which is much RICHER and FINER than brass, he now presents his work in a style and of a quality that are unsurpassed. His relays were awarded the

FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same. He is also manufacturing the

IMPROVED BUTTON REPEATER,

the cheapest, most reliable and simple repeater as yet invented

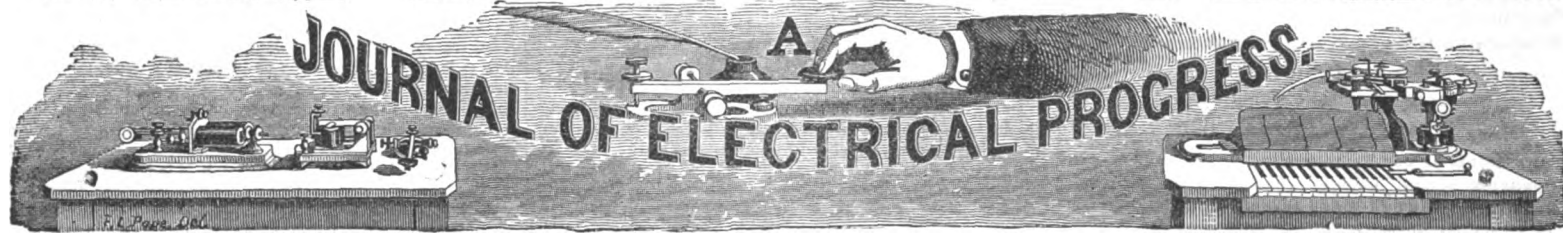
PRICES.

Button Repeaters.....	\$6 00
Relays, with helices in bone rubber cylinders (very fine).....	19 50
Small Box Relays.....	16 00
Medium Box Relays.....	17 00
Main Sounders, some as the above, with heavy armature levers without local connections, 75 cents less.	
Pocket Relays, with all the adjustments of the above, and good Lever Keys.....	22 00
Excellent Registers.....	40 00
Pony Sounders.....	6 75
Keys.....	6 50

All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package. He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

J. N. ASHLEY,
Publisher and Editor, (P. O. Box 6010.)

THE TELEGRAPHER.



Vol. VI.—No. 27.

New York, Saturday, February 26, 1870.

Whole No. 189.

THE ANGLO-AMERICAN TELEGRAPH COMPANY.

A SPECIAL meeting of the shareholders in the above named company was held in London, January 31, Capt. Augustus T. Hamilton in the chair. The report of the Directors was taken as read.

The Chairman explained that the business of the meeting was confined to the consideration of certain agreements and the passing of resolutions necessary to carry them out. He therefore called upon the Solicitor (Mr. Burt) to read the heads of agreements.

Mr. Burt read over the agreements, which recited the terms under which the company at present carried on its operations, and stated that, subject to the approval of the shareholders, an arrangement had been come to for the amalgamation of the three companies having Atlantic cables into one, and a division of the gross receipts of the three cables in the proportion of 63 1-3 per cent. to the English, and 36 2-3 per cent. to the French companies. The only point not mentioned in the report was that arrangements had been made whereby a division of the receipts should take place in the event of either of the three cables being disabled by accident. For the first six months of disablement of a cable no difference would be made. After the first eighteen months, supposing either of the Anglo-American Company's cables disabled, it would continue to receive 60 per cent. for another twelve months, at the end of which time one of its cables becoming permanently disabled and not repaired, it would participate equally in the gross receipts with the French Company.

The Chairman explained that he presided at the meeting at the request of his colleagues. The business engagements of the late Chairman of the company precluded his devoting the time to the company's affairs which was deemed necessary. Coming to the resolutions, he said the shareholders must look upon the scheme for amalgamating the companies as a whole. There were two propositions. In June last the tariff was reduced from £3 7s. 6d., at which it stood for nine months, to £2. That was before the French Company's line was open. But the French Company having advertised a low tariff, it became necessary for this company to reduce its tariff to 30s., and the result was a great falling off in the receipts. There was no public demand for the reduction, and it was only made in order to meet competition. While the tariff was £3 7s. 6d. the receipts averaged £650 per day; when it was reduced to £2 the average fell to £499 per day; and when it was reduced to £1 10s. the average fell to £416, and during the month of January, ending that day, the daily average had fallen to £394. They had seen railways compete in this way, and it became a question whether the example of the railways was to be thrown away upon them. Something might be said about a great monopoly, but he urged that the public would be better served by having the whole energies of the three companies devoted to doing its work well than as at present, when the energies of each were divided. The work would be done more cheaply. The shareholders would, on the other hand, be benefited, because they would have to pay one Board of Directors instead of three, and there would be no necessity for the Committee subsisting for watching the interests of the Atlantic shareholders. Besides which, there would be but one set of agencies to pay. He adverted to the circular issued by Mr. Pickersgill-Cunliffe, and the figures which accompanied it, and said that the basis was fallacious, as it was taken upon receipts which were in vogue when there was no competition. He concluded by moving the formal resolution approving the agreement.

Sir Daniel Gooch seconded the motion, and urged the meeting to adopt it. During the past two months the Board had given a great deal of attention to the matter, and had made the proposal in the best interests of the shareholders.

Mr. Pickersgill-Cunliffe, one of the Directors, moved an

amendment to the effect that it was desirable to print and circulate the agreements, and adjourn until some day in March, when the Board could call another meeting to consider the whole question. He adverted to his circular and the figures therein given, contending that the arrangement was not the best which could be made.

Mr. Conybears thought that the Newfoundland Company ought to have been asked to contribute to the amount this Company had to pay the Atlantic to absorb its interests. The Newfoundland Company was entirely dependent upon this company, because, if this company went to the wall, the Newfoundland Company would have to follow; yet the Anglo-American Company was asked, and was about to give up everything, while the Newfoundland Company conceded nothing. At the same time he was surprised that the Chairman had laid no stress upon the broad question of policy as to the future. There could be no doubt, from the discussions in Congress, that other cables would be laid, and would come into competition. He would rather have met the competition fairly by reducing the tariff to one shilling per word. He therefore seconded the amendment.

Mr. Lawrence supported the amendment, because he believed that the Directors could obtain better terms. He objected specially to the £375,000 to be given to the Atlantic Telegraph Company for its consent to an agreement which a Court of Equity would compel it to give without the payment of a single shilling. The lower the receipts fell the less chance there was of the Atlantic Company getting anything at all. The French Company, too, had an excellent bargain, because their capital was so much larger, and their revenue must be so much greater to pay a moderate dividend.

Mr. Head thought the company in a very strong position. It had two cables, which cost it £600,000. The French Company had one cable only, which had cost it £1,200,000. He was as much in favor of peace as any man; yet he thought it might be purchased at two high a price. (Cheers.)

Lord A. Churchill supported the original motion, because he believed that the amendment would have the effect of shelving the question for a long period. To his mind the agreement would put this company's shares in the position of a 10 per cent. stock. At the same time, as the company would have to go to Parliament for powers, he suggested that it might be as well to take authority to create a sinking fund for the redemption of the Atlantic interests.

The Rev. Mr. Nicholson thought it was impossible that any other company could ever enjoy the same advantages as they did. He objected to the proposal, because it would not put an end to competition even for a single year. The payment to the Atlantic Company was simply black mail.

A shareholder supported the original motion.

Mr. Wall thought the question was not one of dear cables already laid, but of cheap cables to be laid in the future. He thought the company would be in a better position to compete with cheap cables to be laid hereafter if it remained as it was, in possession of two cheap cables, without the incubus of a third and a very dear one.

Mr. Burt, the solicitor to the company, said counsel's opinion obtained had been to the effect that the vote of that meeting would bind dissentient shareholders.

Mr. Barber thought it monstrous that the Newfoundland Company should be larger gainers immediately by the arrangement, and hoped that some explanation would be given.

Mr. Cyrus W. Field said he was very glad the discussion had taken place. He thought very few understood the real bearing of the question, as between the Newfoundland and the Anglo-American Companies. Out of every £3 earned £2 belonged to the Anglo-American and £1 to the Newfoundland. What the Anglo-American did with its moiety was no part of the business of the New-

foundland Company. ("Oh, oh," and cheers.) Two years ago the Newfoundland Company agreed to give up out of its subsidy £25,000, and for two years there had been no interruption in the traffic; but the speaker had only been in England five weeks, and during that time there had been several interruptions of the traffic. He assured the meeting that the Board had given a very serious attention to the matter, and made the proposition laid before the meeting in the true interests of the shareholders. Of the proxies received by the Board 3,338 were in favor of proposal and 210 against it. As to future competition, he did not believe any formidable rival would appear with the slightest chance of success. It had, so to speak, a monopoly, in having an exclusive connection with the whole of the civilized world in communication with America. It had the exclusive connection with Cuba and Mexico on the south, as well as the Pacific on the west. Through the French Company it had a monopoly of the messages from France, and by an arrangement it had nearly an exclusive right to the whole of the German business. How, then, could any new company come into the field and compete against this, with its arrangements and ramifications extending over the world, and its three cables to do the work—all of which could be diverted to meet the demands for any place when stress of business required? Under the proposed arrangement the Anglo-American Company would get its full dividend out of the joint receipts while they amounted to £46,625; after that, the Anglo-American would not participate further until the receipts amounted to £600,000. The real state of the case was this: That the Anglo-American gave up a quarter of the first £125,000 to the Atlantic, upon condition that they in return gave up three quarters of the next £125,000, and he thought, upon the whole, the Anglo-American got the best of it.

The Chairman then put the question to a show of hands, when there appeared for the amendment twenty-seven; against it, twenty-four. The amendment was consequently carried by a majority of three. A poll was demanded, which the Chairman said would be taken at once and close at four o'clock; but, at the request of some shareholders, he decided that it should remain open until one o'clock on February 1. The result of the poll was strongly in favor of the agreement with the French and Atlantic Telegraph Companies, there being 4,032 votes against the amendment and only 685 in its favor.

Recent British Patents.

No. 2,595.—EDWIN DANIEL TEMPLE, Circus Place, Finsbury Circus, London.
Improvements in the construction of telegraph railway signal, scaffold and other posts.

No. 3,778.—AUGUSTUS MATTHIESSEN, Carlton Hill, St. John's Wood, London.
A new or improved insulating substance for the covering of electric telegraph conducting wires, and for electric telegraph apparatus and insulators.

No. 3,780.—HENRY EDWARD NEWTON, Chancery Lane, London.
Improvements in electro-magnetic engines. A communication from Louis Bachel, New York, U. S.

No. 17.—WILLIAM EDWARD NEWTON, Chancery Lane, London.
Improvements in electro-magnets, and the application of the same for obtaining motive power. A communication from Henry Mourse Faine, Newark, N. J., and Mahlen Smith Frost, New York, U. S.

Notices of intention to proceed with patents.

No. 2,634.—GEORGE LITTLE, Rutherford Park, N. J., U. S. A.
Improvement in apparatus for composing, transmitting and receiving telegraph communications, 7th September, 1869.

No. 3,637.—WILLIAM THOMAS HENLEY, Leadenhall St., London.
Improvements in protecting telegraph wires and cables.

No. 2,697.—THOMAS SLATER, Euston Road, St. Pancras, London.
Improvements in the construction of electro-magnetic machines as motors, and in the construction and mode of exciting batteries, and in the application of such motors and batteries to various useful purposes.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion.

No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., Feb. 23.

TO THE EDITOR OF THE TELEGRAPHER.

CONGRESS is still indisposed to take up telegraph matters, and although there is considerable lobbying going on nothing of importance appears upon the surface. In the House, Mr. Wood, of New York, introduced a bill in regard to cable communication with foreign countries, which is the only telegraph measure before either House since my last communication. This was referred to the Committee on Foreign Relations.

Mr. Washburn's special committee on telegraph matters has not as yet done anything. Mr. W. is waiting for an opportunity to get through the House the resolution authorizing his committee to send for persons and papers. It is claimed that heretofore the only evidence furnished has been that of officers of telegraph companies who are interested in maintaining the existing system. The Special Committee propose to send for and examine operators and other telegraphic employes.

There is no expectation here that Washburn's bill, or any project for a Government telegraph, can pass. The Ramsay-Hubbard scheme meets with more favor in some quarters, and may pass the Senate, but its chances in the House are not flattering.

Messrs. Hubbard and E. D. L. Sweet are here, working hard for the Ramsay bill. Messrs. Orton and Sweet are in constant communication, and it is probable that the former is trying to shape matters so that in case the Hubbard scheme should be likely to succeed the Western Union could combine with Hubbard and become the Postal Telegraph Company. In this way Washburn's bill, which is in every respect preferable, would be killed off, as also the present competing lines, and Congressional assistance be secured to back them in trying the experiment. Should it fail the Western Union would then resume its old organization with a clean monopoly of the business. The scheme is a very shrewd one, but it won't work. If Government does not itself monopolize the business it will not grant such a monopoly to private parties.

The unfavorable reports of the operation of the English Government telegraph monopoly are having a very unfavorable effect upon similar schemes here, and it is probable that Mr. Washburn may keep quiet until it is seen how the English arrangement works.

Mr. A. J. Baldwin, well known as a telegraph speculator, has been here, arranging for building a competing line south, to be called the Southern and Atlantic Telegraph Company. It is intended to extend the lines by two routes from Washington to New Orleans. The distribution of poles has already commenced between Washington and Gordonsville, Virginia.

I was in error last week in stating that Mr. D. H. Craig had been here in conference with Congressmen. He is expected here daily, but has not yet made his appearance.

CAPITOL.

Misstatements of Western Union (California) Officials Shown up.

SAN FRANCISCO, Feb'y 9.

TO THE EDITOR OF THE TELEGRAPHER.

HAVING just seen the *Journal of the Telegraph*, dated January 15th, containing serious charges against my character, I ask a small space in your columns to refute those statements, which evidently emanated from the "officials" on this coast.

In reference to the position occupied by me in the League, allow me to state that it was unasked for. I had declined all nominations for any office; but this was refused, and I was unanimously elected to the position I occupy—there being no opponent.

It has been charged that I "had to leave the office" some two years since, "because of a night brawl." In answer to this I have only to say that it was an unwarranted attack upon my person by a fellow operator. I refused to work any longer with this party, and, consequently, tendered my resignation; and the following is a reply which speaks for itself:

(Copy)

"SAN FRANCISCO, July 30, 1868.

"MR. L. N. JACOBS.

"Dear Sir—Your resignation is accepted, to take effect on the last day of this month.

"I regret to have you leave us, as you are one of 'our make,' and have been with the Company a long

time. I think you are somewhat hasty in your action, and hope you will have no cause to regret the step you have taken.

"I take pleasure in testifying to the faithful manner in which you have performed your duty while with this company.

"(Signed),

"JAS. GAMBLE.

"Gen'l Supt."

In addition to the above, Mr. Mumford, on learning the facts, requested a withdrawal of my resignation, promising everything should be arranged to my satisfaction; but I declined. So much for my "discharge," as Mr. Gamble has since termed it. For the truth of the above I refer to F. Jaynes, Cashier; James Urquhart, Manager; J. W. Brown, Chief Operator; C. P. Hoag, and other employes of the W. U. Co., who were in the office at that time. As for the "quarrel" on the opposition line, I pronounce it a *base fabrication*, which, no doubt, emanated from the same source as the former.

Let us look at the "just, generous and considerate gentleman" occupying the position as Managing Agent. As the "Californian" describes me as small, he evidently has not noticed the diminutiveness of this "agent." For his justness and generosity it is only requisite to refer to his administration of the Russian Extension Telegraph Company; and many of our most worthy citizens, who have had dealings with him, can testify how far his "consideration" goes—there being no one in San Francisco holding a prominent position who has as many enemies as this same agent. The W. U. Co. have him to thank for a year's strong opposition by the A. and P. S. T. Co.

As for the "Superintendent," he should first look at his own character before judging others. He has no hesitation in misrepresenting anything which will serve his own interests, as operators well know from experience during the late strike.

I could show both these gentlemen in their right sphere, but in doing so would violate confidence and implicate others, which I do not desire.

Before closing I must return my thanks to that "Californian" for representing me as being "quarrelsome." This is the first intimation I have had of this, and I leave it to those with whom I have been associated to prove the truth or falsity of his statement. However, I shall endeavor to profit by his "kindness."

Fearing I have already occupied too much of your valuable space, I shall close—at the same time stating, should these reports continue to be circulated, you will hear from me again.

L. N. JACOBS.

The Evils and the Remedy.

NEW YORK, Feb. 12.

TO THE EDITOR OF THE TELEGRAPHER.

PLEASE record my fervent amen to JUSTITIA's article in THE TELEGRAPHER of February 5th. It is a most candid and sensible statement of the case, and I desire to testify my hearty appreciation. If you have space, let me also speak a word of encouragement to the downhearted among us. The situation is not flattering, it is true. We have been forced into battle unprepared, and have met our first "Bull Run"—not the first or the worst in the world's history, by any means, and let us not accept it as final. Defeat is not death, and is a better teacher than success. Let us learn well the lessons of the hour, and strengthen ourselves for a future trial, and set ourselves earnestly to remedy the evils we endure. I feel but scorn for those who are willing to submit tamely to be *minions* of the present Great Mogul, and small sympathy (tho' I own the strength of the temptation) with those who abandoned our loved art, and finding some other good berth, think themselves clear of all responsibility in the matter. No one knows better than an operator what a telegraph company ought to be, or how telegraphing should be done, and we are not blameless, if we do not exert ourselves to the utmost to place the business in this country on its proper basis. It is almost futile to expect any radical change from the Western Union. They are loaded with *debris* and bloated with success, and as well can the Ethiopian change his skin as men, whose ignorance is only exceeded by their egotism, learn any lessons of forbearance or justice. There are good and just men among their higher officials, whose personal policy, if pursued, could not fail to give satisfaction, but *cui bono*, while the sub-officials are sustained in a *practice* entirely at variance with a "just and liberal policy." If we turn to the opposition for redress, we find them wholly unequal to the occasion; their service, as at present conducted, is one continued mortification to an earnest worker. They are all trying to back the same load up hill by pushing in different directions, and often stopping to kick or bite each other, and stubbornly refusing to see how easily they could reach the summit by facing their horses one way and pulling together.

A postal telegraph would be for us and for the country but a jump "from the frying pan into the fire." The men who are the bane of the business now would worm themselves into power, and operators be told, as even school teachers are to day: "You must buy *political influence*." No; no. Let Congress abolish the franking privilege, establish an equitable civil service and pay our *debts* before they toy with any such costly experiment. Well, what is the *dernier resort*? Just this: Let us resolve ourselves into a Committee of the Whole, and go to work unitedly and individually for the establishment of genuine and thorough opposition on a cooperative plan. We are not rich, it is true, but we can all do a little, and influence our friends to do more. There is still in existence a chartered company of the kind devised, which, we are told, is "too honest to live;" but it is hard to believe that, with A. T. Stewart's success as a living testimony to the truth of the universal maxim, "Honesty is the best policy;" moreover, W. U. chicanery and duplicity have been somewhat ventilated, and they are not suiting the public any better now than before the strike. The present is a golden opportunity. Let us not neglect it. If the aforesaid company is what we want, we are provided already with a foundation. If (for the sake of their business) we can induce existing oppositions to combine with us (a combination is their only salvation), we shall have already a good start, and can very soon so extend our lines as to stop W. U.'s little game of reducing tariffs below a living rate. Two years' experience with opposition has demonstrated to the writer that any decent company can have all the business they can do, and that will surely give a fair return for investment. Let the fundamental article of our creed be *no humbug*; let every dollar of our stock be *cash*; let our lines be the best possible; let our officers be practical telegraphers or proved men; let skilled labor and good character be at a premium; let honorable competition be welcomed as an healthful stimulus, and we shall soon free telegraphy from the opprobrium it now bears—be again a *respectable* class among the world's workers—and save the country the disastrous experiment of postal telegraphs. I left the W. U. two years ago, because I valued my own self-respect more than their money, and hope to use what small strength I possess *against* them till they are regenerated or dead. I will give freely of my time, my tongue, and my evenings to an *honest* cooperative telegraph company, and I call upon our brothers and sisters *throughout the country* to join hands and shoulder this good work.

A WORKER.

A Chance for Mother Snow's Victims.

LARAMIE DIVISION, U. P. R. R., Feb. 12.

TO THE EDITOR OF THE TELEGRAPHER.

If those ladies you mentioned in your last issue are still in want of situations, they would probably receive desirable positions on this line by application to our worthy Superintendent at Omaha, J. J. Dickey. Our line sadly needs a few of the "gentler sex" to bring it up to that high moral standard which the presence of ladies alone can inspire.

Our genial friend, R. L. Fulton (an "old batch," by the way), who presides over the circuit and administers justice with an impartial hand, will give them a cordial welcome—we speak for Robert, he being a bashful boy—for he says if his boys don't stop "sassing back," and contending for circuit, he will fill their places with lady operators; or, as he expresses it, "operatrixes."

Come on ladies, and we will cheerfully stand one side to make room. But honestly, ladies, there is a good opportunity for obtaining permanent and lucrative situations. There is already one female operator on our line, who fills her place ably and to the satisfaction of all.

F.

Another Response to Hyacinthe.

WASHINGTON, D. C., Feb. 8th.

TO THE EDITOR OF THE TELEGRAPHER.

I WAS greatly surprised at the statement of "HYACINTHE," in your issue of February 5th, in regard to the postal telegraph being favored by the Washington operators. I would like to know at what meeting such a resolution was so unanimously adopted. If it was the one that I was present at, I think it but just to state that such a resolution did come before the meeting, but it never passed. Of course, there are some operators here, perhaps a majority of them, who are in favor of a postal telegraph, but I am decidedly opposed to it. It is my opinion that if over the telegraph of this country passes into the hands of the Government it will become a political machine—the friends of whichever party is in power will receive appointments, whether they be first class operators or not. As you say, in your editorial in answer to "HYACINTHE," that no damages could be recovered, if under Government control, therefore the

Government will seek the cheapest operators, who, of course, belong to the inferior class. Economy seems to be the aim of the Government, and any sensible person ought to know that operators will not receive as good salary as they do now from private corporations. I think it is to the interest of the public that the telegraphs should remain as they are now; and I would take this occasion to state that the business of the Western Union Company is certainly transacted promptly, and accurately as it can be. This, of course, is owing to the talent they employ. I never knew of a first class operator that asked for a situation of this company that was not employed. What I mean by first class, is to be a good operator, sober and industrious. This company has in its employ some of the finest operators in the country. Of course, there are some who are first class that do not exactly receive first class salary. As I am ranked among the first class, and receive first class salary regularly, I do not think it would become me to censure the company about this, my object being merely to show that it is my firm belief that operators are by far much better off in their present situations than they ever will be if the Government should assume the control of the lines.

Permit me also to state, Mr. Editor, with all due respect for you, that I am not smarting under our recent defeat, neither have I had occasion to assent to anything humiliating or degrading since I returned to duty. I was kindly received by my manager, Mr. Tinker, whom I esteem very much, and have been restored to my former position, and everything goes as smooth in this office, under his management, as could be wished. Every man strives to do his duty here, which I know our manager appreciates. Neither do I wish to see this company driven from existence. I know of no evils myself; there are none imposed upon me, therefore it would not be justice for me to assail the company if any are imposed upon others.

JUSTICE.

PERSONALS.

Mr. D. MAREAN has been transferred from the main office to "Ow" office of the Western Union Company at Washington, D. C.

Mr. W. S. LOGUE has taken a position in the Hartford, Conn., office of the Franklin Company.

Mr. C. H. MORRISON, late of the Concord, N. H., office of the Northern Telegraph Company, has accepted a railroad appointment, and retired from telegraphing.

Miss BELL MUDGET, of the Concord office, has recovered from her late illness, and is at her post again.

Mr. LATHAM has been transferred from "Ow." to the Main Western Union office at Washington, D. C.

Mr. P. A. EARLY has accepted the Western Union office at Winona, Ill.

Mr. JOHN W. BROWN has been transferred from the Wilmington, N. C., to the Augusta, Ga., Western Union office.

Mr. D. R. SAUNDERS, operator at Patona, Ala., on the S. R. and D. R. R., has resigned.

Mr. A. F. BRANNON has accepted the position of operator at Patona, Ala., for the S. R. and D. R. R.

Mr. W. S. MAYNARD, formerly of the U. P. R. R., has been appointed Manager of the S. R. and D. R. R. main office, at Selma, Ala.

Messrs. JOHN CURRAN and JAMES PARSONS, two of the late San Francisco strikers, are working for the Western Pacific R. R. at Simpson and San Landro.

Mr. JULES GUTHRIDGE, another striker, has accepted a situation in the Train Despatcher's office of the Central Pacific R. R., at Sacramento.

THE TELEGRAPH.

(By Atlantic Cable.)

DEFECTS OF THE GOVERNMENT TELEGRAPH.

LONDON, Feb. 17th.—In the House of Commons the Postmaster-General again alluded to the irregularity of the telegraph service, and regretted that his hopes of improvement had not been realized. He explained that recent storms and defective insulation had interfered with the working of the wires, while at the same time the lines were overloaded with despatches by the rival news companies. The Government was unable to forward all the news reports offered, and some compromise was indispensable.

There is still much dissatisfaction with the new telegraphic system. The merchants of Glasgow last evening held an indignation meeting, and "denounced the present management."

THE FRENCH CABLE REPORT.

PARIS, Feb. 21st.—The annual report of the French Cable Company, just issued, comments upon "the retrospective character of the American policy" in relation to that company.

CABLE TELEGRAPH COMMUNICATION WITH AMERICA.

PARIS, Feb. 22d.—At a meeting of the shareholders of the French Cable Company, held in this city yesterday, the agreement with the Anglo-American, Atlantic and New York, Newfoundland and London Telegraph Companies, for a working arrangement looking to economy of expense and expedition of business, was unanimously approved, and the Directors were authorized to arrange with the French Government in regard to their exclusive rights, so as to give perfect reciprocity to the United States.

OPPOSITION TO THE GERMAN AMERICAN CABLE UNION.

LONDON, Feb. 22d.—In the House of Commons, to-night, the Postmaster-General said the Government was not disposed to suffer the Branch German-American Cable to be landed at Sowestoff, to connect with the office of the Anglo-American Cable Company at London.

THE GOVERNMENT TELEGRAPH SYSTEM.

LONDON, Feb. 22d.—A letter to the London News denounces the curtailment of telegraphic facilities in London and Liverpool, when the authorities had reason to anticipate and time to prepare for an indefinite expansion of business on the transfer of the telegraph wires to the Government.

THE WEST INDIA CABLE.

LONDON, Feb. 23d.—The new cable to connect the West India Islands will be laid in about two months.

Official Statement, Western Union Telegraph Co.

	Dec., 1869.	Dec., 1868.
Total Receipts.....	\$597,063 55	\$634,630 11
Total Expenses.....	425,582 20	395,342 96
Net Profits.....	\$171,481 35	\$236,287 15

FOREIGN TELEGRAPHIC NOTES.

ADVISED from Yokohama, Japan, to the 24th January, state that the new telegraph line between Jeddo and Yokohama has been completed—the first message having been sent over the wires January 7th. The line will be thrown open to mercantile purposes very soon.

After a lapse of some years efforts appear to have been successfully made for reestablishing direct communication between England and the Channel Islands. The Jersey and Guernsey Telegraph Company propose to lay a new cable by a shorter route than the one previously adopted, more advantageous in every respect; and they also propose to use a much stronger and more suitable cable than the one previously laid over the longer route, and which proved an expensive failure. The new cable will be laid from a point near the Start across to Guernsey, and from thence to Jersey. The longest length of the cable required by the company can be laid in one day; and as the greatest depth of water will not exceed seventy fathoms, any repairs that may be required can be quickly made. The cable has been contracted for, to be manufactured and laid within a short period, for the sum of £25,000; and a further agreement has been made with the manufacturers, who will, for the sum of £1,000 per annum, maintain the cable in perfect working order for five years.

To avoid the liability to interruption of the land line of 600 miles in length across the Island of Cuba, in completing the connection between the cables of the International Ocean Telegraph Company and the extensions to Jamaica and Panama, the Cuba Submarine Telegraph Company has been organized, with an exclusive concession for forty years, for laying a Submarine Cable from Santiago de Cuba—the landing place of the Jamaica Cable, at the southeastern extremity of Cuba—to Batabanos; from thence a land line will be erected along the railway across the Island to Havana, a distance of about thirty miles; there it will join the cable to the United States. The length of the cable will be 540 miles, and will be manufactured and submerged by the India Rubber, Gutta Percha and Telegraph Works Company, for the sum of £147,000, and is to be of the same efficient description as that made for the International Ocean Telegraph Company and for the West India Company. The directors state that it is expected that the cable will be laid within the next four months—arrangements having been made with the contractors for its manufacture and simultaneous shipment with the first portion of the West India and Panama Company's cable at the end of March next, so as to connect, without delay, the terminus of that company's line with those of the International Ocean Telegraph Company.

The Faraday Memorial.

A SUM of about £1,400 has been subscribed, chiefly among men of science, towards the memorial to the late Professor Faraday. It is expected that it will take the shape of a statue or monument in the British Museum.

TELEGRAPHIC BREVITIES.

THE Pacific and Atlantic Telegraph Company have opened a branch office at No. 60 William street. Mr. Hughes, formerly manager of the Western Union office at Titusville, Pa., has taken charge of the new office.

In the Texas Legislature, now in session at Austin, resolutions were presented on Saturday recommending the establishment of a general postal telegraph system. They were laid on the table.

A Contemptible Trick.

We learn that a mean and contemptible attempt to interrupt the telegraphic communication of the Atlantic and Pacific Telegraph Company, between Lockport and Buffalo, and, in fact, the entire communication of the company west of this city, was perpetrated Sunday night last, by some malicious person or persons, yet unknown. The attempt was partially successful, until Thursday afternoon, when the cause of the interruption was discovered by the repairers by means of testing instruments. It was found that, upon the ninth pole west of this city, the three wires were connected by means of a piece of hair wire, wound round each of the main wires several times, and so close to the pole as not to be easily seen by a person standing on the ground. The connection of the three wires in this manner had the effect of incapacitating two of them from working direct between Chicago and New York, and has been the source of great annoyance and positive damage to the company, to what amount, however, we are not prepared to say. It was fortunate for the company that this interruption of their communications had not been perpetrated in the summer season, when the lines are crowded with business, and when the damage and annoyance would be much greater than it now is. At that season of the year, also, the leaves on the trees would render it much more difficult to detect the cause of the interruption, and probably necessitate the taking down of a whole section of poles and wires. Investigation will probably be instituted immediately, and the guilty party, if possible, brought to justice. The lines are again in working condition, and business goes on without any interruption.

In an advertisement the company offer a reward of \$25 for the apprehension of the person or persons who caused the interruption.—Lockport (N. Y.) Daily Journal.

New Patents.

For the week ending Feb. 1, and each bearing that date.

No. 99,358.—FIRE-ALARM SIGNAL BOX. George W. Shawk, Cleveland, Ohio, assignor to the Cleveland Fire-Alarm Company.

Claim.—A fire-alarm telegraph apparatus box or case, when constructed with an inner door, C, for the protection of said apparatus, and provided with a counterbalanced curvilinear lever, E, for winding said apparatus, in the manner substantially as described, and for the purpose specified.

No. 99,401.—PRINTING TELEGRAPH.—Edward A. Callahan, Brooklyn, N. Y.

Claim.—1. A train of gearing and a fly applied, substantially as specified, to render gradual a motion derived from the movement of the armature of an electro-magnet, substantially as specified.

2. The combination of the following devices: an electro-magnet and armature, a fly and train of gearing, a disk and pawl, and an actuating spring or weight, the parts being constructed and arranged so that the actuating spring or weight is moved by the armature, and gives motion to the regulating fly, substantially as set forth.

3. The spring 24, in combination with the train of gearing, fly, armature, and adjusting device 50, whereby the speed of movement is regulated by the adjustment of the spring 24, substantially as set forth.

4. The arrangement of three electro-magnets, and their connections, substantially as specified, so that the first shall regulate the movement of the type wheel, and direct an electric current through the second magnet; the third magnet is brought automatically into action, to give the impression, when the circuit through the second magnet is broken by the stopping of the type wheel, substantially as set forth.

5. The lever 1', arm 11, and yielding circuit closer 18, in combination with the armature 2', to close and break the circuit to the magnet n, as set forth.

6. The ratchet wheel 1, dog 10, and lever 1', in combination with the pawl 2, disk 3, fly 3', and circuit breaker 2, substantially as set forth.

7. The lever 2, with the arms 30 and 33, in combination with the armature 2', lever 2', arm 35, inclines 34, and circuit closer 31, substantially as set forth.

8. A swinging arm 30, yielding incline 34, in combination with a circuit closer having a limited movement, substantially as specified, so that the circuit is broken at the end of the movement by the action of the incline.

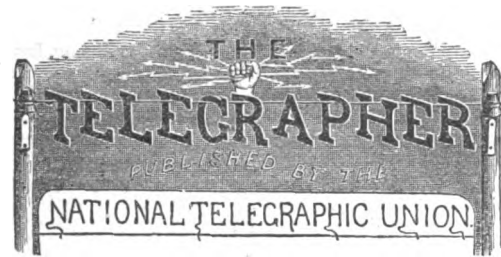
9. The means herein specified for giving motion to the feed wheel of a printing telegraph, the same consisting in a pawl and plate, swung by the armature lever upon the axis of the feed wheel, in combination with a disk having a roughened periphery, substantially as set forth.

For the week ending Feb. 22, and bearing that date.

REISSUES.

No. 3,847.—INSULATOR. Louis A. Carvet, New York, N. Y. — Patent No. 48,906, dated July 25, 1865.

Claim. The Glass Insulator, J, provided with an internal screw-thread, in combination with a wooden pin or bracket, having a corresponding screw-thread formed thereon, substantially as described.



SATURDAY, FEBRUARY 26, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE NATIONAL TELEGRAPHIC UNION.

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MISREPRESENTATIONS OF THE OFFICIAL ORGAN.

THE editor of that exponent of sentimental twaddle and literary balderdash, the official organ of the Western Union Telegraph Company, has been so extensively stirred up by the recent outbreak of the operators of that company as to temporarily devote a portion of its columns to misrepresentations of the facts, and of the men connected with that protest against telegraphic tyranny. This change is the more startling from the amiable imbecility which has heretofore characterized its editorial management. We have noticed that, since the advent of Mr. GEORGE B. PRESCOTT in the executive office of the Western Union Company, there has been an infusion of vitality into that effete organ—which has heretofore been the laughing stock of intelligent telegraphers everywhere—that gives color to the report that he is soon to succeed the present bucolic editor in the management of the paper. For the editor of the *Journal*, personally, we have the kindest feelings, but as the mouthpiece of the Western Union Company, and as the editor of its official organ, he cannot reasonably object to criticism, however severe, which is provoked by the course of the paper for which he is justly considered responsible.

In the last issue of that gratuitously circulated sheet appears the statements of JAMES GAMBLE, General Superintendent of the Western Union lines on the Pacific Coast, and others, subordinate officials, in California, giving what purports to be a full statement of facts preceding and during the recent strike. These statements are prefaced with brief editorial comments, in which occurs the following:

"The strike has been a natural issue of the anonymous abuse of those in official position, the circulation of the meanest and most personal and vindictive diatribes against faithful men and the management of the Company, week after week, encouraged and stimulated as they were by those who were safe from the operation of any injury which such an agency was sure to occasion." This, of course, refers to THE TELEGRAPHER and its correspondents, although neither are directly mentioned. We accept the issue, but deny the truth of the statements. Just what influence this paper has with the telegraphic profession it is not for us to say. That its influence, much or little as it may be, has ever been exerted to unnecessarily create dissatisfaction with the proper and legitimate management of the business or affairs of the Western Union Company, is untrue. That its columns have been used for "anonymous abuse of those in official position, the circulation of the meanest and most personal and vindictive diatribes against faithful men and the management of the Company," is infamously false!

As we have often stated, this paper is the property and the organ of the practical telegraphers of the country. Through its columns they are entitled to be heard

when they are or suppose themselves to be aggrieved. To all such we have cheerfully given a hearing. In the rare instances when such complaints have been unfounded, or arisen from misapprehension, we have as readily and cheerfully given equal prominence to the other side of the story. Will the official organ deny that the Chicago and Pittsburg operators had good cause for the ventilation of their grievances? Can it select from our columns any instance in which such complaints have not been founded in just cause, or, if not, promptly refuted? No such instance can be found.

The present organization of the Western Union Company, and the systematic disregard of the complaints of subordinates against those who are immediately superior to them in position, necessitate the ventilation of grievances through some channel other than the official. No operator on the Eastern Division of the Western Union lines can to-day make charges against his manager or superintendent except through those officers; and, if such complaint should be made, he knows that his discharge would be sure to follow, and his representations meet with no consideration.

As to the anonymous character of the correspondence of THE TELEGRAPHER, no letter is published, involving a personal matter, for which we have not the name and authority of a person known to us to be responsible. Of course these names are not made public, or furnished to the Western Union officials, that they may be enabled to wreak their vengeance upon the wretches who dare to write and protest against their ill treatment. For the wrongs and outrages which have been inflicted by the subordinates we have not held the Executive of the Company responsible further than that they were bound, when such evidences of discontent were presented, to probe the matter and see what real grievances did exist, and provide an adequate remedy for them.

Again, we have been charged by the official organ with using the influence of THE TELEGRAPHER to promote strikes. This is another falsehood. In only one event have we advised organized resistance, and that one in case of an attempted general reduction of salaries. That we regarded as sufficient justification for extreme measures, and we still so regard it.

We have deemed it proper to say thus much in response to the contemptible covert attacks of the official organ upon us.

As for the statements of GAMBLE and others referred to, they are mainly made up of contradictions of the statements of Messrs. JACOBS and FIELD, made during the continuance of the strike, and of personal attacks upon those gentlemen. We publish this week a letter from Mr. JACOBS, which puts in their true light GAMBLE'S slanders in regard to him. We presume that our readers are weary of this more than thrice told tale of the California difficulties, and we do not now propose to rehearse it. We have read carefully the statements, and see no reason from them to alter our opinion in reference to the matter, or to doubt the substantial truth of the statements made by Messrs. JACOBS and FIELD. The whole affair was precipitated *intentionally* by the peremptory discharge of the Sacramento operators. Previous to that action no strike had been determined upon, and none would have taken place but for it.

One thing more—we protest against the League being held responsible for the foolish or wicked remarks of members, either in good standing, or who, in violation of their honor and their solemn oath, went back on it.

Such remarks as that quoted by GAMBLE, as having been made by one of the strikers, that "if they had got the upper hand of us we might as well have shut up shop," do not represent either the sentiment or purpose of the League, as far as we know them. The foundation idea of the League was, not to interfere with the legitimate management of the affairs of any telegraph company, but by a combination to insure to members a maintenance of their just rights, and such treatment as was properly due to them from their employers and those who

were placed over them. The terrible oath which has so rasped up the pious feelings and religious sensibilities of the editor of the *Journal*, and of the managers of the Western Union Company, meant just this and nothing more.

In its earlier stages the League was necessarily a secret association, but the time was near at hand when this mask of secrecy would have been thrown off, and the existence and purposes of the society made public. Whenever the League became strong enough (as it would have been within a few months, if this premature movement had not crippled it) to protect its members from persecution on account of such membership, no further secrecy would have been attempted.

We do not see the wisdom or necessity of keeping up the discussion in regard to this matter. The sooner the Western Union Company establishes a reform in its administration, which shall secure to even the humblest of its employes a chance for redress of grievances, and ceases its persecution of those who have been obliged to yield to its combined power, and allows this whole matter to pass into oblivion, the better.

The interests of the company and of its employes are to a certain extent identical, and justice and magnanimity on the one side will be met with hearty appreciation and honest service on the other.

Modern Practice of the Electric Telegraph.

THE second edition of Mr. POPE'S work, "*Modern Practice of the Electric Telegraph*," having been disposed of, the stereotype plates and the copyright of the work have been purchased by Mr. D. VAN NOSTRAND, of 23 Murray street, in this city, the well known publisher of professional and scientific works, who will immediately bring out a third edition of this excellent work. Orders may be addressed to him or the Editor of THE TELEGRAPHER, as heretofore. The rapid and continued sale of the book has shown that it met a necessity for such a work that had long existed. The demand for it still continues, and it is only disposed of because the previous publishers had other business which fully occupied their time.

He has His Reward.

MR. JOHN LENHART, who was the first of the operators in the Western Union office (who struck), to return to duty, has since been discharged on some pretext. This result was anticipated, and must create some uneasiness on the part of others who hastened to humiliate themselves to save themselves from the effects of their action. The managers of the Western Union Company, like others similarly situated, while they "love the treason despise the traitor."

The English Government Telegraph.

THE average Governmental stupidity and red tape arrangements appear to have characterized the acquisition of the telegraph in Great Britain. Ever since that unfortunate event the commercial public in England has been annoyed by vexatious delays, uncertainty, and inaccuracies in the transmission of telegraphic business, and the newspapers have been filled with complaints of the manner in which the business has been done. The post-office authorities made a reduction of charges for telegraph service, which rendered inevitable an immediate and material increase of telegraph communications, but neglected to make any adequate preparation for the business. The price for news despatches for the Press was reduced to a ridiculously small figure, at which long despatches could be sent for very little money, and as a consequence, this class of business was, of course, enormously increased. In the smaller places the telegraph instruments were transferred to the local post-offices, and placed in charge of inexperienced post-office employes, which of itself would be sufficient to destroy the value and efficiency of the service. Altogether telegraph mat-

ters in Great Britain appear to be in a perfect muddle, with no certainty as to when they will be improved. So great is the difficulty and dissatisfaction, that the Marquis of HARTINGTON, the Postmaster-General, has found it necessary, on two or three occasions, to apologize for the short-comings of the Government telegraph in the House of Commons, but his promises of improvement do not as yet appear to have been realized.

This state of things should be a lesson to the enthusiasts in this country who desire to place this important interest in charge of our Post-office Department, which is confessedly not as well organized or as efficient as the British department. The muddle there is nothing to what it would be here under the same circumstances. We trust that the members of Congress will study the facts presented in England, and save us from any such difficulties here, by discountenancing the efforts which are being made to realize a similar and worse condition of the telegraph in this country.

The Same Just and Liberal Spirit.

It is known that, during the trouble on the Western Union lines, operators were obliged to work day and night, in order to enable the company to get along with its business with the greatly reduced force. Those operators who remained were paid for their extra labor. A number of these, who deserted their companions and resumed their connection with the company, were also required to do extra duty. Of course they supposed, after all the promises made to them if they would only abandon their comrades, that they, too, would participate in this extra compensation. When pay day came, however, they had a practical illustration of "the just and liberal spirit which this company has always manifested in its dealings with its employes." Their pay for the time they were absent was deducted, and no extra compensation for extra labor allowed. Verily, they have their reward!

Return of Mr. Cyrus W. Field.

MR. CYRUS W. FIELD, who has been for some months past in England, on business connected with the Atlantic Cable, arrived home on Saturday last, in the steamer Main. We understand that Mr. FIELD has been entirely successful in arranging cable matters satisfactorily, and he returns in fine health and spirits.

MR. CHARLES BURT, the Solicitor of the Anglo-American Telegraph Company, also arrived here on the Main, and will represent the English companies in any business matters that may require settlement here in connection with the cable interests.

American Compound Wire.

In our notice of this excellent conductor, and its rapid introduction, we omitted to mention the fact that the Isthmus of Darien Exploring Expedition took out a supply of the wire for establishing telegraphic communication between the parties engaged in the survey and the headquarters of the expedition on the coast.

DIED.

SPRING.—February 24, at Philadelphia, Pa., PARKER SPRING, formerly Assistant Superintendent of the Bankers and Brokers' Telegraph Company.

YEAKLE.—February 26, at Philadelphia, Pa., the infant son of C. O. YEAKLE, of the Bankers and Brokers' Telegraph Company.

DINGLEY.—February 23, at Philadelphia, the infant son of G. W. DINGLEY, of the Bankers and Brokers' Telegraph Company.

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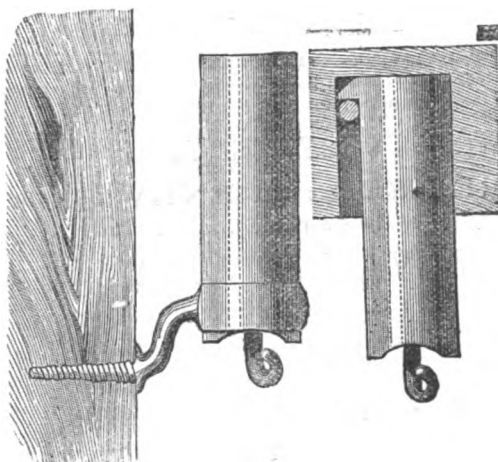
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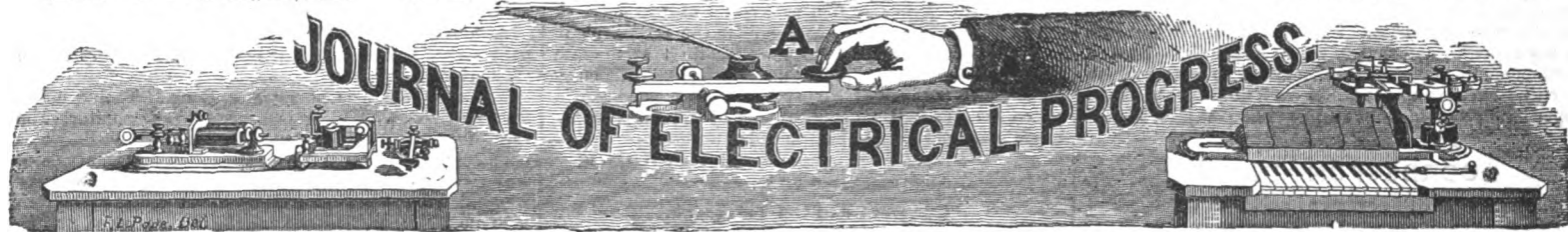
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THE TELEGRAPHER.



Vol. VI.—No. 28.

New York, Saturday, March 5, 1870.

Whole No. 190.

THE ENGLISH GOVERNMENT TELEGRAPH.—ITS UTTER INCOMPETENCY TO DO THE BUSINESS.

We have at last a full statement of the working of the telegraph lines in Great Britain, and its utter failure to do the work not merely as well as the private companies, but at all. Our space is too limited to give the full details, but the following extracts from a special cable despatch to the *New York Tribune*, dated February 27th, will give an idea of the condition of the lines and business under Government management:

Three weeks ago the Post-office took possession of the telegraphs throughout England, Ireland and Scotland. As that department postponed the transfer till its arrangements were deemed complete, we have had time to estimate the advantages of the transfer. There can be but one opinion—that the experiment thus far has proved a disastrous failure. Heretofore, the English telegraph system has been one of the best in Europe; now, certainly, it is the worst. Its service is now characterized by continual delays and incredible mistakes—prompt delivery being the exception. The local London charges have been doubled, for the sake of pedantic uniformity, and for double charge inferior service is given. The total collapse of the provincial system has repeatedly occurred, and London journals are filled with protests, editorial and individual. The country journals are forced to go to press morning after morning without telegrams, or with few. The House of Commons resounds with complaints; business suffers; the great mercantile communities remonstrate and petition vainly. Probably never was a period, since telegraphing begun, when the public was so ill served. [Here follows a condensed history of the service since Government had control, with evidence of dissatisfaction among all classes, and from every part of the United Kingdom.]

The transfer was completed on Saturday, February 5th. Little was done on Sunday and Monday. The new arrangements, elaborated at leisure by the Post-office, had completely broken down. Telegraphic communication had practically ceased throughout the United Kingdom—but six stations answering London. The Irish and Scotch wires down to Liverpool and Manchester could not be reached, and the whole west of England was cut off from London by an accident in London, attributed to a clumsy workman. The accident was repaired, but the transmission of the Queen's speech on Tuesday, containing less than 1,000 words, again blocked the wires. Commercial and private messages everywhere were detained. The country press fared still worse. The *Edinburgh Scotsman*, the leading Scotch journal, has a special wire from London, but on Tuesday had only one third the usual news. On Wednesday it received only the last half of the report of the debate on the Queen's speech. Liverpool papers make the same statement. The *Mercury* of the 9th says Liverpool is wretchedly supplied, and the scanty news that came was comparatively worthless and unintelligible.

Manchester, Birmingham, and Dublin were equally destitute. The *Irish Times* (Dublin) of the 9th says: "London correspondence telegraphed us on Saturday, at 4 in the afternoon, was received Monday morning at 11. A letter would take 24 hours less." The Dublin Chamber of Commerce were without report of the London markets till evening. The *Times* of the 14th prints an account of an urgent message announcing illness, sent from Oxford at 11 on Thursday morning and not delivered in London till 10 o'clock on Friday. The result was that a parent died before the son arrived in London.

Brokers write to *The Standard* of the same day that the new telegraph administration is an utter break down. In their business, done by telegraph with provinces, their messages formerly brought a reply in an hour and a half, but it now takes four hours, and sometimes they are not received till next day. Hence, they are threatened with

the "utter collapse and ruin of our business." The *News* of the 15th says that the telegraph system is not working with many of the most important towns in the three kingdoms. The Post-office again pleads bad weather. Mr. Scudamore, chief post official, sends *The Times* of the 15th a list of wires not working, including Liverpool, Brighton, Bristol, Cambridge, Hull, Newcastle, Glasgow, Edinburgh, Leeds, Birmingham and Manchester, adding: "To what extent communication is interrupted on branch lines is not known." Delay has also occurred in all communications with the continent. On Tuesday, the 15th, Mr. Gladstone introduced the Irish Land Bill. Few or no English or Scotch provincial papers received next morning a full report of his immensely important speech, although finished at eight o'clock. The *Scotsman's* report breaks off abruptly. The *Sheffield Independent* announced a company about to run a line of stages between London and the principal towns, to compete with Post-office wires, "which they will have no difficulty in doing." Meantime, the patience of the great mercantile communities became exhausted. On Feb. 15 a great meeting of merchants of the Royal Exchange, Glasgow, adopted a memorial expressing "their deep disappointment" at the condition of the whole telegraph system, declaring the Post-office telegraph management habitually and thoroughly untrustworthy; which, under the old companies, was rarely and exceptionally the case. Instead of communication with and answer from London within an hour, as formerly, several hours are now required for transmitting a single message, while answers are very rarely received within business hours of the same day, and copies of messages by post arrive sooner than originals by telegraph.

At Liverpool, on the 17th, more than two thousand merchants signed a memorial remonstrating against the serious inconveniences and injury suffered from the present system. "Business is partially disorganized in consequence, and, unless a speedy remedy is found, the general trade of the country will suffer." "Time enough," they say, "has elapsed to justify the country in expecting a service as efficient as formerly." The House of Commons, on the 17th, again demanded explanations, and the Postmaster-General again confesses to "very serious delays, and very great inconvenience throughout the country"—but one wire working from London to Dublin and one to Scotland—and does not expect matters to improve till the thaw comes.

The *Daily Telegraph* of the 18th says the weather theory will not answer. Total interruption could be understood, but the annoyance really lies in the capricious uncertainty with which messages are conveyed along the same wires, to the same spots, about the same time. How happened Dublin to receive a full report of Mr. Gladstone's speech, and not Manchester and Liverpool? It repeats that the true explanation is the weather, plus imperfect organization.

The *Liverpool Mercury* of the 18th reports great dissatisfaction in commercial circles, exchange news-rooms being almost wholly without their necessary information. To business on "Change the result has been disastrous.

Ireland fared no better than England. The *Irish Times* of the 17th says that, notwithstanding an exclusive wire from London, it was unable to get anything like the number of reports and other important matter provided at great expense. The London correspondent of the same journal writes a letter containing the announcement that what the Irish members would do with respect to the Land Bill, along with other intelligence interesting to Irish people, was suppressed on Tuesday night by the telegraph authorities.

The *Manchester Guardian* of the 19th states that an effort is likely to be made in the House of Commons, by several influential members, to abolish Government telegraph monopoly.

The *News* of the 21st publishes conspicuously a long

letter, describing the "universal wail among business men over the complete break down of telegraphs in Government hands." The writer received and sent fifty messages daily, at a former time, between London and Liverpool. The message and reply averaged an hour and a half, often under an hour, and sometimes fifteen minutes. By the present system the quickest reply takes three hours—the average is six hours—and single messages often require five hours. They are incorrect, also—twenty-five per cent. of the present messages containing mistakes. He explains the causes of the present breakdown. In Liverpool, out of six offices formerly near the Exchange, five are now closed. Messages from the sixth are sent by pneumatic tube to the General Post-office to wait their turn, with others from all parts of the town, instead of going direct, as formerly.

For such a state of things Hartington's explanations, as the London press has said, wholly fail to account. His speeches are merely official apologies, but the real explanation we need not go far to seek. The transfer to Government is a mistake, and Government management a series of blunders. Formerly several distinct companies were compelled to consult public convenience, under penalty of losing business and having no dividends. Unrestricted competition produced admirable service. The Government bought up the existing lines, consolidated them, secured legal monopoly to itself, and handed the telegraphic service over to the Post-office. The first object to the Post-office has always been revenue. It pays £600,000 yearly, and everything gives way to keeping up that surplus. The convenience of the public and the efficiency of the service are secondary considerations. The Department proceeded to work telegraphs on the same principle. Knowing that one railway can carry any number of letters, it was believed that one office could receive, and one more transmit any number of telegrams. Service for three kingdoms was organized accordingly. Instead of several distinct competing lines to each large town, with separate officers and staffs, now there is but one line, and there is but a single office and single staff.

The Press Association, last week, despairing of the telegraph, resorted to carrier pigeons for racing news from Croydon, which arrived punctually at regular intervals. To accomplish such results it was that the Government took possession of the telegraphs, paying a price so enormous as carried telegraph shares, in some cases, to three hundred per cent. It was natural that a transaction which began in reckless squandering of public money should end in penurious economy of management, reckless trifling with public needs, and peril to great public interests. There may be a gradual improvement in the service hereafter. There must be, or public indignation will compel the abandonment of the Government monopoly, and establishment of new private lines—perhaps again to be bought up at exorbitant rates, and to be followed by new confusion, and incalculable injury to business.

The Telegraph Messengers in England.

A CEREMONY, not in itself, perhaps, very imposing, but nevertheless, one in which the public have considerable interest, was performed at the General Post-office on February 4. The transfer of the telegraphic lines to the control of the Post-office was made an occasion for the inspection of the "Metropolitan Corps of Telegraphic Messenger Boys." It is of little avail that a message should travel at lightning speed from one end of Great Britain to the other if the messenger charged with delivering it dawdles over his work. The post-office authorities have, therefore, very wisely taken in hand the boys used as messengers by the various telegraphic companies, and have organized them into a corps, drilled and disciplined after the model of the Volunteers. They number about 600, and are between the ages of thirteen

and fifteen. They have been given a uniform similar to that worn by the letter carriers of the Post-office, and every effort will be made by singling out, for special reward and promotion, those of them who behave well, and who have become too old for their present duties, to connect them permanently with the department; at least this hope was held out to them by Mr. Scudamore in a few remarks, and the guests, who had already taken refreshments up stairs, were then asked to withdraw, in order that the boys might fall to work undisturbed at the supper kindly provided for them.—*The European Mail.*

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion.

No notice will be taken of anonymous communications.

Automatic Telegraphy.

TO THE EDITOR OF THE TELEGRAPHER.

YOUR correspondent, Mr. Westbrook, seems resolved to continue a public correspondence, which has no clear point, to my apprehension, except to show, first, that telegraph managers were too stupid to appreciate his (alleged) invention, or, secondly, that his invention really possessed no merits to commend it to public favor. Having informed myself through the report of a careful and thorough expert, Mr. Westbrook will excuse me for the belief that his system is not only worthless, but would prove, if generally introduced upon American lines, damaging to the extent of at least 25 per cent. in the despatch of business. In this particular I may claim consideration for my judgment, because it accords with the judgment of gentlemen of thorough knowledge of telegraphy, and who have no private interests or theories to advance by decrying or commending one system over another.

Mr. Westbrook's automatic system is, substantially, the Morse hand key system, with about 25 per cent. of extra and totally unnecessary expense added. He first embosses the Morse characters upon a strip of paper, by the aid of the Morse hand key and electro-magnetism, and then, having expended all the time necessary to telegraph the same message 250 miles, transfers the embossed paper (with all the imperfections inseparable from the hand key system of writing) to a second machine, and then transmits, automatically, the embossed characters over a line of 250 miles, with very little, if any, greater speed than could be done by the ordinary Morse hand key system, and with less than one half the accuracy and precision that could be done by the latter method.

Obviously Prof. Morse was first on the list to emboss paper by electro-magnetism operating a pointed lever, and that is the only meritorious thing about Mr. Westbrook's system. I can only conjecture the reason why the professor did not claim the invention, publicly as well as privately, in connection with automatic telegraphy, a quarter of a century since, at the time he claimed the invention of electricity, but I have no doubt it was owing to his modesty, or a conviction that such a system of automatic telegraphy was utterly valueless for all practical purposes.

Mr. Westbrook's reiterated statement that Mr. Little has introduced no new feature in the transmission of messages automatically, evinces a degree of recklessness or presumption on the part of Mr. W. that is not creditable, to say the least. We claim immense superiority, and entirely new principles in our composing, transmitting and receiving machinery, as well as in the elements by which our recording is effected, with unerring correctness and regularity, at a rate of speed greatly more than 500 per cent. than that of the Morse-Westbrook, or any other practical automatic system of telegraphy ever devised.

With a system like the Morse, House, Hughes, Bain, Hummaston, or the Morse-Westbrook, which cannot be worked in independent circuits over about 250 miles in good weather, and one quarter of this, or not at all, in wet weather, Mr. Westbrook may well trump on his ability to relay his messages, and I cheerfully accord to him all he claims, with the single remark that in embossing his message by the use of the Morse hand key, with Morse characters, and by the Morse electro-magnetic system (I have never been informed precisely what Mr. Westbrook invented of a system which appears to be Morse all through) he starts his message with inaccuracies, in the writing of the characters, equal to seven per cent.—that being the average of blunders by the Morse system in the hands of thorough experts—and it is fair to assume that the irregularity of the writing or embossing at the start would be more and more distorted at every relay; and by the time such a message was trans-

mitted 2,000 miles, though it might start pure English, I am sure it would arrive at its destination in nothing better than Chinese or Choctaw. As by the Little system we can write in circuits of 2,000 or more miles with more regularity, even in wet weather, than can be done by the Morse system in circuits of 250 miles in good weather, we do not contemplate the relay style of business, but if forced to relay we can do it at the rate of 20 to 25 words per minute, and when the difficulty on the wire is removed we can re-send the message six to ten times faster than can be done by the Morse-Westbrook plan, and always with unerring accuracy.

D. H. CRAIG.

Congress and the Telegraph.

WASHINGTON, March 2d.

TO THE EDITOR OF THE TELEGRAPHER.

On Thursday of last week, after my letter was despatched to you, Mr. Orton, the President of the Western Union Telegraph Company, made an argument against the Hubbard bill before the Postal Committee of the Senate. The argument was an able and exhaustive one, and illustrated by copious statistics, showing conclusively the superiority of private over Government management of the telegraph. Under the proposed bill, if passed, the Western Union Company could easily take possession of the organization, and when this was done competition with it would be utterly impossible. In illustration of the fallacy of the argument that a reduction of rates would so largely increase the business as to make up the relative decrease in the revenue, he said: The receipts of the Western Union Company for messages, during the year 1869, were, say \$6,500,000, and the expenses \$4,500,000. The same number of messages which yielded the above receipts would, under the Hubbard bill, have produced less than \$2,000,000, or about \$1,000,000 short of the sum which his company paid for salaries. He assumed that the Government could not perform this service at less expense than the company, and therefore, under the Hubbard bill, the telegraph business of the country would have cost the Government last year a sum nearly equal to the deficit of the Post-office Department. He admitted that a reduction of rates would largely increase the number of messages; but an increase of fifty per cent. in the volume of the business, without any increase in the cost of performing the service, would still leave a deficit of more than a million dollars.

On Friday Mr. Orton concluded his argument before the Committee, and Mr. Hubbard replied. He attempted to refute Mr. Orton's able argument, and the statistics which had told so severely against his project. He developed no new facts or arguments, however—merely restating what he has already reiterated in his speeches from Maine to California, in his efforts to obtain a popular endorsement of his scheme.

The arguments were listened to with much interest by the Committee and others, and it was generally conceded that Mr. Orton had decidedly the advantage in the discussion. The fact of his representing a party so largely interested in the matter as the Western Union Telegraph Company detracts somewhat from the influence which he would otherwise have.

The Postal telegraphers here have been very much cast down by the disastrous fizzle made by the English authorities, in their attempt to run the telegraph business of that country. When the *Tribune* of Monday was received Messrs. Hubbard, Ramsay and Washburn were in a very gloomy mental condition. They knew that the experiment there, upon which so much depended, was working badly, but had no idea of how disastrously the postal telegraph folly had resulted until they read the *Tribune* despatch.

In view of these facts, and the coolness and opposition of the public to these schemes, it is hardly probable that any serious effort will be made at this session to obtain decisive action on the subject. If there should be, there is now no doubt of the result.

Mr. Washburn's special committee on the telegraph has done nothing as yet, and manifest no disposition to commence the investigation which the chairman so strenuously advocated and demanded. CAPITOL.

Telegraph Line of the Oregon Steam Navigation Company.

THE DALLES, OREGON, Feb'y 2.

TO THE EDITOR OF THE TELEGRAPHER.

I DESIRE to correct a statement in the communication of your Salem correspondent, "Oregon," published in THE TELEGRAPHER of January 1st, in reference to the distance from Portland to Umatilla, which is 210 miles instead of 110, as stated.

This line, which is owned by the Oregon Steam Navigation Company, has been very substantially constructed, and is in better working condition than any other in the

State. As there is no competition, this company, of course, gets all the business, and is in a flourishing condition. The rapid increase of business on the line is surprising. It has been in operation less than two years, but in that time its business has developed from comparatively nothing to its present proportions.

At Portland, Oregon, is the main office of the Company and of the line, and here Mr. Daniel Leahy is the efficient chief operator.

The next office is at Rooster Rock, fifty-five miles from Portland, with W. A. Gardner as chief operator. The Cascade office is next upon the line, with J. W. Brazie as chief operator, assisted by S. B. Jones and McDonald. From the Cascades the line runs through some very rough country, but is so well constructed that it seldom gets out of order. The next is the Dalles office, Mr. L. C. Thompson officiating both as chief and assistant operator. The last office is at Umatilla, J. S. Schenck being chief, with B. B. Bishop as assistant operator.

It has been proposed to extend this line to Walla Walla and Boise city, via Wallula, which will doubtless be done before a great while. WINQUATT.

Telegraphic Matters at the Capitol.

WASHINGTON, Feb. 15th.

TO THE EDITOR OF THE TELEGRAPHER.

SINCE the termination of the late "Onpleasantness" your Washington correspondents seem to confine themselves to the postal telegraph. What has become of "Magnets," "Spring," "Planchette" and others, who were wont to figure as TELEGRAPHER correspondents?

Telegraphically matters at the Capitol are demoralized, and the friendly feeling that had become characteristic of the Washington telegraphers appears to have become a thing of the past. The force in the office here does not seem, as yet, to be satisfactorily reorganized. The night force are well pleased, but how could they be otherwise with so excellent and popular a night manager?

The failure of the strike has left six of the original force out in the cold, the majority of whom are first class men. Some have obtained other employment, and others are still hoping for a chance to return to their former situations. Some of those who have returned to work have expressed their determination to leave the business as soon as an opportunity offers. There are several "scabs" (so named by the manager) on duty here yet, but they will be got rid of as soon as possible.

Many telegraphers here are looking anxiously to the success of the postal telegraph, as a means of relieving them from the oppression of the Western Union Telegraph Company. Although the condition of the operators in Washington, in many cases, is worse than before the strike, yet we are glad to see that the Western Union Company in Washington have opened their hearts in the matter of extra pay for extra work. The schedule, as it now stands here, is nine hours to constitute a day's work, and seven hours night work—equal to a day's work of nine hours. Extra compensation, for extra work performed over the hours named in the above schedule, to be paid for proportionately to the salary the operator receives performing extra service. This is very well received by the operators here, and it is hoped that it is the forerunner of many more good changes.

The National Telegraph Company, who propose to work their lines on the Little Automatic system, have completed their line between Baltimore and Washington—their line of two wires extending as far as the corner of Pennsylvania avenue and Eleventh street. The locality of their main office has not been determined upon yet, but it is thought it will be in the vicinity of Newspaper Row (Fourteenth street and Pennsylvania avenue), as it is pretty well understood that the company will make a big effort to secure the majority of the special press despatches sent from Washington. PERDU.

The Situation in Nebraska.—Appreciation of "The Telegrapher."

OMAHA, NEB., Feb. 24th.

TO THE EDITOR OF THE TELEGRAPHER.

SINCE the termination of the strike on the Western Union lines little of interest for THE TELEGRAPHER has transpired in this vicinity.

We took an active part in the great struggle, striking from two to three days before our eastern brethren, and keeping it up long after the abolition of all Western Union members. Our "gobbling" committees were ever on the alert; so much so, that on one occasion a trial before the Police Court was the result, the Judge deciding in our favor. One of the "rats" wishing to go to supper, got Sup't Hibbard to relieve him for that purpose. When he reached the street he was so foolish as to create a street fight, when our accommodating marshal hustled

him of to jail: Hibbard, in the meantime, got very impatient at the youth's long absence, not knowing how events had gone, and not until an early hour the next morning did he learn the fact, when he proceeded to the jail, and with some difficulty procured his release from durance vile, and set him at work again. Hibbard and his Lamb endeavored to secure men from the Union Pacific Railroad Co. to assist them, but to no purpose. Their operators nobly refused to come, but passed resolutions of sympathy, and not to work for the Western Union, which were signed by every operator on the line excepting one, a "plug," at Benton, Wyoming. The resolutions were then acted upon.

The absolution message of Mr. Pope was received here by Western Union line, and upon that account was not credited. It was, however, confirmed by Chicago papers, and not until then did we despair of the result. Some of our boys were very severe in their denunciation of Mr. Pope for "selling us out," as they thought. This, of course, is all bosh, and that opinion, now that fuller reports of the circumstances are at hand, has been entirely changed.

Thus far but two of our boys have returned to the Western Union office—Hiliker and Ayres—who were sent for by Hibbard. Mr. E. Rosewater leaves the business; Fieomon Drake is selling Great Western stock, and expects to get the management of their office here; E. L. Smith, after the Police Court embroglio, hurried off to Chicago; and E. L. Armstrong is waiting, like Micawber, spending his time at the "Brunswick," and telling big yarns to greenies.

We expect now that a regular "onslaught" will be made upon THE TELEGRAPHER, its contributors and subscribers, by the officials of the Western Union Co. They can do no harm though, as operators cannot afford to be without this invaluable medium of communication and intelligence. We in the West will endeavor to do our portion towards its maintenance, and promise it a vigorous support in this particular locality. QUILL.

Testimonial to an Ex-Superintendent.

PARIS, ONTARIO, Feb. 4th.

TO THE EDITOR OF THE TELEGRAPHER.

ABOUT twenty operators of the Telegraph Department of the Great Western Railway (all who could conveniently attend) assembled in the despatcher's office at London, to do honor to our late Superintendent, Mr. J. T. Waugh. This is another instance of good feeling, such as should and might always exist between telegraph Superintendents and those over whom they are placed.

Mr. J. C. Showerman, who succeeds Mr. Waugh, is from the Michigan Central Railroad; but, during the late War in the United States, was in Capt. J. C. Van Duzer's department, and will be remembered by all the operators employed in that department as the gentlemanly, genial and obliging despatcher at Kingston, Ga., Knoxville and Chattanooga, Tenn.

While we have lost a kind and excellent Superintendent in Mr. Waugh, we feel that his place could not be filled better than by the present incumbent. If our good wishes avail, he will live long to enjoy his position, and only leave it for a better one. REGIS.

PERSONALS.

Mr. P. P. HAUFF, formerly of the Western Union office at Pittsburg, Pa., has accepted a position in the Titusville, Pa., office of the same company.

Mr. EUGENE FREW has been transferred from the Pittsburg to the Titusville, Pa., Western Union office.

Mr. W. H. STERLING has accepted a situation in the Western Union office at Canandaigua, N. Y.

Mr. W. W. PRUGH has accepted a situation with the Union Pacific R. R. at Cheyenne, Wyoming Territory.

THE TELEGRAPH.

(By Atlantic Cable.)

CABLE TELEGRAPH PROFITS.

PARIS, Feb. 24.—The French Atlantic Telegraph Company, at their last meeting, declared a dividend of one and three quarters per cent. for five months—being from the opening of the line for business on the 15th of August, 1869, to January 15, 1870, the date of agreement with the Anglo-American, Atlantic and Newfoundland Companies.

TELEGRAPHIC COMMUNICATION WITH INDIA.

LONDON, Feb. 28.—The submarine cable from Bombay to Aden, at the mouth of the Red Sea, has been successfully laid by the steamship Great Eastern. This link places England and her Indian colonies in direct telegraphic communication. Messages from Bombay of today's date have been received here to day.

TELEGRAPH EXTENSION IN CUBA.

HAVANA, Feb. 26.—Telegraph communication has been established between Havana and Ciego de Avila.

FOREIGN TELEGRAPHIC NOTES.

CAPTAIN S. OSBORN received the following telegram late on Monday night, February 14:

"Bombay, Feb. 14—8:50 A. M.—The Great Eastern and Chiltern left at eight o'clock this morning. They proceeded immediately. The splice to the shore end is finished. The tests of cable are most satisfactory."

The Governor of Bombay telegraphs from Malabar Point, February 14, 7:38 P. M., as follows:

"Laying of cable most prosperously commenced. Please to communicate the following to Captain Sherard Osborn: 'The splices were completed at five P. M. under weigh, and paying out. All going well.'"

It is stated that the Board of the British Indian Extension Telegraph Company have under consideration the question of altering the Indian terminus of their cable to Singapore, and that the line will probably be laid from Madras to Singapore, instead of from Ceylon to Singapore, with the object of availing themselves of the superior telegraphic communication existing between Madras and the other presidencies.

The prospectus of the new cable company from France to Algiers has been issued. It is to be called the Marseilles, Algiers and Malta Telegraph Company (limited), and the capital is fixed at £200,000, in shares of £10. The length of the line will be about 862 miles, and it is to be manufactured by the Telegraph Construction and Maintenance Company, and laid before the 15th of August next. The route, by obviating the necessity for the land communication of 1,300 miles through Italy, will take the French traffic to and from Egypt, India, Cochinchina, China and Australia, and allowances will be granted to the company by the various other companies on all through messages. Mr. Latimer Clark is engineer to the company.

The block telegraph system, which was adopted by the Midland Company on the new line between Bedford and London, has worked so satisfactorily that the directors have resolved to establish that system of working the trains over the whole of the main lines, and it is already in operation, in addition to the Bedford and London line between Bradford and Leeds, New Mills and Derby, Derby and Nottingham, Mangotsfield and Bath, Bristol and Yale, and is applied to the working of the new line opened on February 1, between Chesterfield, Sheffield and Mashbro'. The success of the system on the London and Bedford line is strikingly apparent, when it is considered that the large suburban and through traffic running over that line has been conducted with perfect safety during the fifteen months the line has been opened, without a single failure in the working of the block telegraph. It is gratifying to find that such an effective means of safety is likely soon to be in full operation over all the principal lines of the extension Midland system.

The instruments which have been adopted by the English Post-office authorities for the Government telegraph for general use, are the Morse, the single needle instruments, and the bell telegraph. Between large stations, with a good staff of skilled operators, the Morse instrument will be used. The single needle instrument is regarded as the best for small stations, since it will bear much knocking about, and is not very liable to get out of order. The bell telegraph is much used in Ireland, which is the reason that its use there is still to be continued.

A Valuable Lesson.

It is most fortunate for us that just at the time when Congress is again entreated to take possession of a vast and complicated private business, extending from ocean to ocean and from Alaska to Florida, in order, apparently, that persons who now derive no profit from it may have the satisfaction of seeing that others in like manner derive none, we can see the results of the experiment to which they are exhorted, as already tried in the more densely populated and therefore more favorable field of Great Britain. The system of Government telegraphing has been on trial in England, Scotland and Ireland for three weeks. The details from our own correspondent sufficiently attest the utter failure of the system. We commend to gentlemen who believe our Government has not enough to do now, and think it ought to undertake the private business of managing all the telegraph wires and telegraph offices in the country, the results of experience. Messages are sent by trains; carrier pigeons are invoked; the newspapers are in a quarrel with the Postmaster-General because he undertakes to tell them how much matter they ought to transmit; the public fill columns with their protests; Boards of Trade complain

that they can get no news—in short, the Government effort has thus far proved a complete failure. Is this the feast to which Mr. Hubbard invites us?—*N. Y. Tribune.*

A Wonderful (?) Electrical Apparatus.

A New York City daily gives a lengthy description of an electric engine, the essential features of which are thus lucidly set forth: "An ordinary galvanic battery is used, and the poles of the battery cups are connected with a powerful magnet, and the increased electrical power is then transmitted to the electrical engine. The magnet is first formed by taking an even grained piece of horseshoe wire and turning it down to the required proportions. The iron is bent into the shape of the letter U, and then passes into the hands of the inventor, who treats it to a series of bakings in various temperatures—the process being a secret. From two to three weeks are required for this tempering process." After this the magnet is smoothed up, and made ready for connection with the battery. It is further stated that the residence of the inventor was of late burglariously entered and his baked magnets carried off. "He is of opinion that other parties interested in developing electricity as a motive power were unscrupulously anxious to avail themselves of his labor and secret."

New Patents,

For the week ending February 1.

REISSUE.

No. 3,820.—PRINTING TELEGRAPH.—The Gold and Stock Telegraph Company, New York, N. Y., assignees by mesne assignments of Thomas A. Edison.

Claim.—1. The adjustable stop, *g* or *h*, in combination with the click *b* or *c*, and ratchet wheel *D*, substantially as specified, whereby the position of the wheel *D*, when blocked and stopped, can be adjusted by the stop *g* or *h*, substantially as set forth.

2. The adjustable stop *g* or *h*, click *b* or *c*, ratchet wheel *D*, and lever *E* or *F*, in combination with the type or character wheel *C*, and an electro-magnet, to give motion to the lever, substantially as and for the purposes set forth.

3. The clicks *b* or *c*, levers *E* or *F*, magnets *I* or *J*, and ratchet wheel *D*, in combination with the stops *g* or *h*, substantially as specified, for moving a type or character wheel with a step by step motion, in either direction, substantially as specified.

4. The unison lever *L*, in combination with the type or character wheel, and a separate electro-magnet, *M*, substantially as specified.

For the week ending February 8, and each bearing that date.

No. 99,873, antedated February 3, 1870.—INSULATOR FOR TELEGRAPHS. Stephen L. Finley, Morrisania, N. Y., assignor to himself and Marshall Lederts, New York city.

Claim.—The cap *g*, sitting down over the insulator *b*, and inclosing the clamping mechanism *f*, that secures the wire to the insulator *b*, substantially as set forth.

No. 99,892.—RELAY FOR TELEGRAPHIC INSTRUMENTS. Edward S. Hidden, Millburn, N. J.

Claim.—1. The combination of a float with a reservoir and single coil and two prongs and cups, both at the same end of the float, the combination being and acting substantially as described.

2. The reservoir, open at bottom, in combination with a float and prongs and cups arranged below the reservoir, the combination being substantially such as specified.

3. In combination with the relay, as described, the levelling contrivance, as specified.

4. In combination with a reservoir, open at the bottom, and a float and prongs, two mercury cups, adjustable vertically with reference to the reservoir, substantially as described.

5. In combination with a float, reservoir, and coil, all substantially such as described, a guide applied to the float, near the end thereof, where the prongs are located, substantially as specified.

6. The cups, with a screw on the outside thereof, in combination with the revolving nut and the connecting wires, which prevent revolution and permit vertical movement of the cups, and in combination with these elements the jam screw-plug and the flanges, whereby the nut may be jammed, as described.

7. The weight attached to the screw-plug, when the nut in which the latter rests is supported by gimbals, as described.

For the week ending Feb. 22d, and each bearing that date.

No. 100,202.—NEGATIVE PLATE FOR A "SMEE" BATTERY. Luther L. Smith, Brooklyn, N. Y.

Claim.—1. The making and use of a solid nickel plate, or of a plate made of copper, brass, lead, or any other metal, and coated with nickel, as a negative plate for a Smee battery.

2. A solid nickel plate, or a plate made of copper, brass, or any other metal, and coated with nickel, to be used for a negative plate for the Smee battery, as a new article of manufacture.

For week ending March 1st, and each bearing that date.

No. 100,442.—CIRCUIT-CLOSER FOR ELECTRO-MAGNETIC RAILROAD SIGNALS. A. Warner Platt, New York, N. Y.

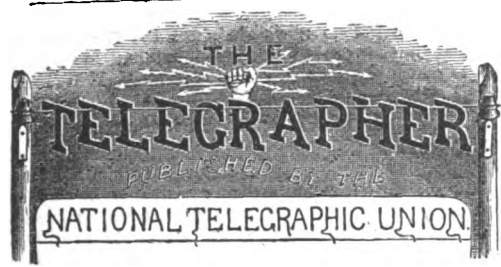
Claim.—The pin *B*, vertically, or nearly so, through the rail *C*, and projected above the thread thereof by a spring, *D*, within the box *A*, in combination with the circuit-closer *d*, all arranged substantially as shown and described.

REISSUE.

No. 3,859.—ELECTRO-MAGNETIC ALARM FOR RAILROAD SWITCHES. Hall's Patent Electric Railway Switch and Drawbridge Signal Company, New Haven, Conn., assignees of Thomas S. Hall. Patent 62,414, dated February 26th, 1867.

Claim.—1. The method above described, of creating a continuous alarm at a railroad station until a switch, out of its place, has been readjusted.

2. The combination with the switch, or movable rail, of the slotted lever *F*, swivel-head *C*, plate *g*, and metallic connections *A* or *A'*, for operating an electric signal or alarm apparatus.



SATURDAY, MARCH 5, 1870.

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RAPID EXTENSION OF SUBMARINE
TELEGRAPHS.

THERE has been nothing more remarkable in the history of the telegraph than the present rapid extension of submarine telegraph lines. This business, which until the successful establishment of the Atlantic Telegraph, was regarded as of so uncertain and precarious a nature as to repel rather than attract investments of capital, is now regarded as the most advantageous, and as promising certain and remunerative returns. The speculation in submarine lines has attained such proportions in England as to amount almost to a mania. Every week THE TELEGRAPHER contains the announcement of one or more new cable companies, and the capital called for by lines in course of construction, or projected, amounts to between thirty millions and forty millions of dollars. It cannot reasonably be expected that all these projects should realize the anticipations of sanguine projectors; but, although a portion of them may, and probably will prove unremunerative to their stockholders, the benefit to the public will undoubtedly more than compensate for exceptional sacrifices.

Within a year or two, at the furthest, the world will be spanned by telegraph wires, and immediate communication between the most widely separated localities will be established. Time and space will be practically annihilated, and India and China, for business purposes, be no more distant than California is now. A New York merchant will be able, in the afternoon, to send his orders to Ceylon or Hong Kong, and find the response upon his desk upon reaching his place of business the next morning. All the great commercial cities of the world will be bound together as London and New York now are; and great enterprises, by the aid of the telegraph, which formerly required months and years to complete, will be accomplished in a few hours or days.

It is impossible to over-estimate the importance of the great social, financial, and political revolutions which ocean telegraphy is destined to cause. The peace of nations will be more certainly assured, and wars less likely to be inaugurated. Differences, which otherwise would rankle for weeks and months, can at once be explained and conciliated, and a more friendly and brotherly feeling between different peoples and governments be established.

In business matters, the change that is taking place under the combined influences of the development of the capabilities of electricity and steam are no less wonderful. The slow operations and moderate success of the past have been done away with already, and the amount of business done within a given time has been enormously increased, and is to be still more indefinitely increased in the future. The most sanguine enthusiast of twenty years ago did not dream of the wonderful developments

which are now of so ordinary and common occurrence that they have ceased to be matter of astonishment.

Great as have been the achievements in the past, it is impossible to predict, with any certainty, what they shall be in the future. The human mind is stimulated and excited to intense activity by the pressure of this fast age, and new principles and inventions are being constantly developed of the utmost importance.

The telegraph is entering, daily, more and more into all the ramifications of business and of social intercourse. Bankers, brokers and merchants, now regard as absolutely necessary the service of the telegraph in the instantaneous reporting of quotations of stocks, gold and exchange. Lines to connect counting-rooms and factories are being constantly constructed, until the private telegraph has become almost an indispensable adjunct to the transaction of any business, even if only of moderate extent. New instruments have recently been developed, which do this work with a reliability and certainty heretofore unknown, and the demand for them is rapidly increasing.

The future of the telegraph is beyond our comprehension. There seems to be, practically, no limit to its development, or to the demand for its services. The earth is being rapidly spanned with its wires, and the ocean serves as its pathway.

Failure of the English Government Telegraph.

WE publish on the first page extracts from a despatch to the *New York Tribune*, giving an account of the failures, blunders and confusion attending the attempt of the British Post-office Department to carry on the telegraph business of that country. This statement, which does not exaggerate the mischief done by this attempt to interfere in what properly appertains to private enterprise, is full of instruction to the members of Congress who are so persistently urged to introduce the same confusion in the telegraph business of this country. The experiment is tried in England under much more favorable circumstances than it could be here, and the result is a failure, so disastrous as to disarrange the whole business, press, and social arrangements of the people. Month after month, the Government postponed taking possession of the wires until everything could be got in readiness for the proper transaction of the business, and, when it finally could postpone no longer, things are as bad as if no preparation had been made. Telegraphing is not the legitimate business of the Government of a free country, and can never be so conducted by Government officials as to give satisfaction. We commend the experience of the British Government and people in this matter to the intelligent consideration of Messrs. WASHBURN, HUBBARD, RAMSAY, and other postal telegraph advocates.

The Underground Wire Project Revived.

THE Cologne *Gazette*, writing upon the above subject, says:

The storm of the 17th of December, 1869, called general attention to the imperfections of the present system of constructing telegraphic lines. While the wires are above ground they are exposed to injury, not only from violent gales of wind but from innumerable other causes. They may be broken by a sudden change of temperature, and when a frost is severe they are often encased in a crust of ice so thick that they are unable to bear its weight. In the course of from ten to twenty years they are destroyed by rust. The expense of galvanizing them is very great, and it is almost impossible to subject them to the processes with such care as to leave no parts unprotected. The influence of damp frequently causes a loss of the current sufficient to disturb communication, or at least to endanger the exactness of the despatches. Lightning is sometimes attracted, and melts the wires or cleaves the posts. Besides this, it is advisable not to forward telegrams during a thunder storm, as the life of the official may be endangered by his doing so.

Subterranean lines are exposed to none of these disadvantages. In 1867 several such cables, which had been buried for ten years and more, were carefully examined, and they were found to be in a state of perfect preservation. These considerations would render their

general adoption advisable, but as they are far more expensive than those in general use, on account of its being necessary to protect them from the influence of the earth by means of an insulating covering, it will be well to employ them at first only in those districts where several wires are required.

The *Gazette* proposes the following subterranean lines from Berlin: One to Cologne, with branches to Coblenz, Mayence and Frankfort-on-the-Main; one to Frankfort-on-the-Oder, with branches to Breslau, Posen and Thorn; one via Stettin to Dirschau, with branches to Dantzig, and one via Königsberg to Insterburg; one to Dresden, with branches via Halle to Erfurt and Frankfort-on-the-Main; one to Hanover, with branches to Holland and Bremen; one to Hamburg and one to Stralsund. These lines would require 287½ German miles of seven, twenty-six German miles of four, and 172 German miles of three wired cable.

The entire expense of constructing them would amount to about 7,000,000 thalers, but the whole sum need not be laid out at once.

The Cologne *Gazette* is evidently writing upon a subject of which it understands very little. We have heretofore, in the columns of THE TELEGRAPHER, very fully set forth the obstacles and objections to the underground system of telegraph conductors. These obstacles and objections are of sufficient importance to largely overbalance any advantages to be derived therefrom. In almost every instance, where the plan of burying wires in the earth for any considerable distance has been resorted to, it has, after thorough trial been abandoned, and the wires again suspended in the open air. One objection, of itself fatal to the project, is the fact that subterranean wires cannot be worked for any considerable distance at anything like the speed with which air lines are constantly operated. The tendency and study now is to increase not diminish the speed of telegraphic transmission, as the only possible solution of the problem how the price of telegraphic service may be reduced, without entailing ruinous loss upon telegraph proprietors.

The Effect of the Cable Consolidation.

THE recent agreement between the Anglo-American and the French Cable Companies will, we presume, bring the latter company into close arrangements with the Western Union Company, and terminate the present connection of the French cable with the competing companies. It view of this fact, we should not be surprised if another cable connection should be soon projected to replace the French cable connection.

If the several competing companies, instead of laboring for each other's destruction, would unite their forces, as we have constantly advised, and extend their system to all important points in the United States, as united they easily might do, they would be saved from the mortification of seeing the Western Union Company monopolize cable and other valuable connections.

Panama and South Pacific Telegraph Company.

WE are informed that the stock of this company, of which we published an account in our issue of February 12th, has all been subscribed for and allotted, and the work of manufacturing the cable is in progress.

Gen. W. M. F. SMITH, President of the International Telegraph Company, is one of the leading Directors of the company. Sir CHARLES BRIGHT, the well known electrician, is the engineer.

The Brooks Insulator.

DAVID BROOKS has issued a circular pamphlet in reference to his Patent Paraffine Insulator. This circular contains about forty certificates. Some are from the highest authorities in this country and in Europe. Professor MORSE, in his late report to Congress, speaks of this invention in the highest terms.

Besides certificates, the pamphlet contains an interesting article on the subject of insulation. The American certificates are from railroad companies who have adopted this insulator with great success.

But the greatest proof of its worth is the guarantee of the inventor. This guarantee is to exceed the ordinary

glass insulator, in wet weather, one hundred times, which is equivalent to exceeding the English standard of a megohm per mile fifty times; and he agrees to maintain for any length of time this immense difference, at a compensation of two dollars per mile per annum, for one wire, and three dollars per mile for two wires.

Although the first cost of this insulator is about twice that of the ordinary insulator, the subsequent cost of maintenance makes the Paraffine Insulator much the cheaper, not taking into account the vast difference in results obtained.

Sad Fate of Charles.

We have hitherto neglected to record the sad fate of an individual dear to every telegrapher's heart. We refer to "Boston CHAWLES," whose determined and defiant attitude, during the difficulty on the Franklin line, will be remembered. Mr. CHARLES J. BURD was then styled the General Agent of the Franklin Company—he is thus styled no longer. His day of brief telegraphic authority is over, and amid the shades of private life to which he has retired he can read his communications to the Boston newspapers, and his clarion notes of defiance to insubordinate telegraphers, with a proud consciousness which adversity cannot destroy.

In carrying out economical reforms in the affairs of the Franklin Company, it was discovered that the services of a General Agent were not indispensably necessary to the welfare of the company. This fact was brought to the attention of "Chawles," and his resignation was promptly tendered and accepted. How have the mighty fallen!

G. C. Wessman & Son.

We take pleasure in calling the attention of our readers to the advertisement of G. C. WESSMAN & SON in this paper. This is one of the oldest establishments for the manufacture of telegraph and electrical apparatus in the country. It has always been noticed for the excellent quality of the work done, and for the care and personal attention given to the execution of all orders.

More Knowledge in High Places.

At the Astor House, in this city, recently, a high official of the Western Union Company was recently boasting of the working of the lines to Plaister Cove, N. S., in *one circuit*. A telegraph expert present, somewhat astonished at the assertion, inquired, "Don't you use any repeaters?"

"Oh yes," says he, "but it is worked in one circuit."

Electricians and telegraphers will appreciate the wisdom of the statement, and commend even brevet brigadier-generals to a study of elementary electrical works.

Couldn't Open the Telegraph Box.

GOTHAM's new fire alarm telegraph boxes puzzle some folks. Yesterday afternoon an individual was noticed approaching one with a letter in his hand. He gently seized the top to raise the lid, but it wouldn't raise worth a cent. He tried harder, thinking perhaps it was frozen down; still it wouldn't come. He gazed upon it on all sides, but no orifice for the apparent intended reception of letters could he see, unless it was the key hole, and he'd be—well, he wouldn't roll up his letter small enough to force it through any such minute opening. So, with a puzzled and disappointed look, he slowly and meditatively retired to look for a more accessible receptacle.

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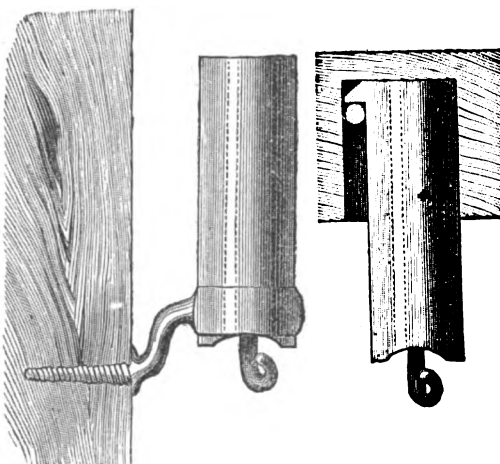
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(Adjoining the American House.)

They manufacture Electric and other Fine Machinery to order. Their Special Inventions are:

The Electro-Magnetic Watch Clock,
which is the best Watchman's time recorder in the world.

The Telegraphic Gas-Holder Gauge,
which constantly shows at the works the quantity of Gas in the Holders.

A System of Many Clock Dials,
controlled electrically by one Standard Timepiece.

An Electric Vane and Register,
which shows within doors the direction of the wind at all times.

A Magneto-Electric Alphabetical Dial-Telegraph.

The Best and most Economical for Private Business and Railroad purposes, requiring no voltaic battery.

THEY SOLICIT ORDERS FOR

**Chronographs, and Astronomical Clocks,
Regulators, &c., &c.**

DR. L. BRADLEY,

AT NO. 7 EXCHANGE PLACE,

Jersey City, N. J.,

Keeps constantly on hand and for sale his

Improved Telegraph Instruments.

Having adopted the use of

ORSEIDE METAL,

which is much RICHER and FINER than brass, he now presents his work in a style and of a quality that are unsurpassed.

His relays were awarded the

FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 16, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same.

He is also manufacturing the

IMPROVED BUTTON REPEATER,

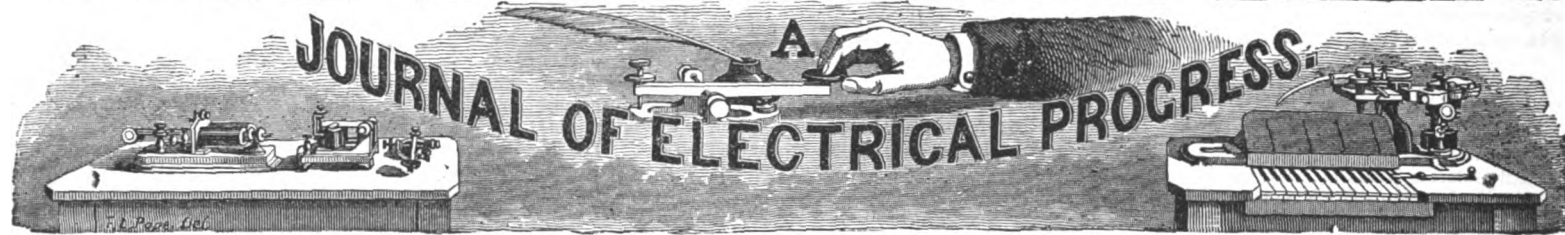
the cheapest, most reliable and simple repeater as yet invented

PRICES.

Button Repeaters.....	\$6 00
Relays, with helices in bone rubber cylinders (very fine).....	19 50
Small Box Relays.....	16 00
Medium Box Relays.....	17 00
Main Sounders, some as the above, with heavy armature levers without local connections, 75 cents less.	
Pocket Relays, with all the adjustments of the above, and good Lever Keys.....	22 00
Excellent Registers.....	40 00
Pony Sounders.....	6 75
Keys.....	6 50

All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package. He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

THE TELEGRAPHIC.



Vol. VI.—No. 29.

New York, Saturday, March 12, 1870.

Whole No. 191.

LITERATURE.

A Hand-book of Practical Telegraphy. By R. S. CULLEY. Fourth Edition, Revised and Enlarged. New York: D. VAN NOSTRAND, 23 Murray and 27 Warren Street.

THE first appearance of Mr. Culley's *Hand-book of Practical Telegraphy*, in 1863, inaugurated a new era in telegraphic literature. Although of small size, and written in a simple and unpretending style, it contained more common sense and more practical information than all the previous works which had appeared in the English language combined. Although not faultless, in a scientific point of view, yet it was so far in advance of all its predecessors, and supplied such an obvious and long felt desideratum, that it was gratefully received by a large class of eager students of electrical science, who, for the first time, were enabled to avail themselves of that technical knowledge of the laws of electricity, and its practical application, before attainable only through verbal instruction, or the tedious school of actual experience. Since that time the labors in this field have been enlarged and extended by the publication of such works as those of Clark, Sabine and Pope, which, though differing widely from each other in their mode of treatment of the subject, are all characterized by the distinctively practical character of which Mr. Culley in his work was the first to set the example. During this time, however, the author of the *Hand-book* has not been idle, but has kept pace, in successive editions, with the rapid development of electrical science, which has been such a marked characteristic of the past decade.

The fourth edition, which now lies before us, is nearly double the size of the original work, and in addition to the new matter which has been incorporated with it, the older portion has been revised and re-written. The volume, as a whole, is a credit both to the author and the publisher.

The first part of the work treats of "Sources of Electricity." A lucid and correct explanation is given of the theory of the action of batteries, supplemented with descriptions of the different kinds, and useful directions for their maintenance and management. In the introduction it is stated that the Daniell battery is used by the three great telegraph companies of England, now merged into one system and under government control. The form most generally employed is an oblong box or trough, divided into five cells, with flat plates of zinc and copper, about four inches square, instead of placing each couple in a separate cylindrical tumbler, as is usually done in this country. The English arrangement is convenient, cheap, and economical of space.

The Leclanche battery, recently introduced, is described, and appears to give good satisfaction. The electro-motive force is equal to 1.6 that of Daniell, with much less internal resistance, but when placed in short circuit it polarizes very quickly, and it therefore cannot be used for permanent currents nor as a local battery. Mr. Culley says that the Marie Davy, or sulphate of mercury battery, is almost exclusively employed at the Central office of the French Administration of Telegraphs, in Paris.

Mr. Culley devotes a chapter to the important subject of insulation, in which this matter is more fully treated of than is usual in works of this class. In describing the qualities desirable in an insulator for telegraph lines he says: "The best insulator is that which has the smallest possible diameter consonant with strength, with the greatest distance between the wire and the bolt or support, and which can be maintained in the driest condition in wet weather, while exposed freely, as regards its outer surface, to the cleansing action of rain." This is a concise and correct statement in the main, but we think Mr. Culley overrates the beneficial effect arising from the cleansing of the insulators by exposure to rain. In wet weather the outer surface will conduct, whether clean or

otherwise. Of course a clean surface helps to insulate the line in fine weather—when help is least needed—but if a circuit can be so insulated as to work well in wet weather there will be no trouble at other times. This result may be accomplished simply by practically carrying out the principles above laid down by Mr. Culley, which has been done to the fullest possible extent in the American paraffined insulator, invented by Brooks. A glass bottle, protected by an iron shield, is interposed between the wire holder and the support, having a diameter of about an inch, and an insulating length of about nine inches. This is kept dry in wet weather by the use of paraffin, as well as by its form and arrangement in regard to the pole and wire. Compare this with the ordinary glass insulator, having a diameter of two inches or more, and an insulating length of two inches, and the reason of the superiority of the first is apparent, leaving the paraffin out of the question.

Mr. Culley states incidentally that, "on a long line, the leakage from wire to wire through damp air cannot be altogether without effect." It is about time that this popular fallacy was dropped from scientific works. This point has been experimentally tested, by suspending several hundred square feet of metallic roofing within a foot of the ground, on a foggy day, supporting it by new paraffined insulators. A Thompson galvanometer, so delicate as to give 2,000° deflection through 1,000,000 ohms resistance with one cell of battery, showed no conduction whatever between the roofing and the ground, with 1,000 cells of battery! Therefore, we do not apprehend any serious difficulty in working lines from this cause, provided the points of support are once thoroughly insulated.

We cordially endorse all that Mr. Culley says in regard to the periodical cleansing of insulators. To keep a telegraph line in thorough working order the insulators ought to be cleaned every year, whatever kind may be used. It seems exceedingly strange that people will build a telegraph line, and expect it to keep itself in order forever afterwards, unless it actually falls down from decay. If they build a house they expect to paint it every three or four years; if they build a railroad they are continually at work repairing it, but if the insulation of a telegraph line becomes defective from the accumulations of years of dirt and neglect, there is no remedy but to throw all the insulators away and try some other kind, perhaps better, but quite as likely to be worse than the original variety. The pig-headed stupidity of the American telegraphic mind upon this subject would be irresistibly laughable were it not so humiliating.

The chapter on the construction of lines contains a great amount of useful advice; much of which, however, is more valuable to the English than to the American constructor. The latter, however, cannot fail to be benefited by a careful study of European methods, as they abound in valuable hints, which may be practically carried out to advantage in this country, though frequently by entirely different processes.

In the present edition the portion relating to submarine telegraphy has been re-written and enriched by the addition of a very large amount of new matter. The methods employed in testing the French-Atlantic Cable, during its manufacture and submersion, are very fully described and profusely illustrated, and the student of this interesting but abstruse and difficult branch of electrical science will find in this work his most valuable compendium. It is fully up with all the most recent discoveries and investigations.

The work is rather scantily illustrated as a whole, and the cuts and diagrams are not remarkable for their artistic elegance, but otherwise the mechanical execution of the book is worthy of the highest praise. The type, printing, paper and binding, are all of the finest quality. We are glad to note the rapidly increasing demand for books of this class, and can assure our readers that they will find this one of the very best of its kind.

The Atlantic Telegraph Company.

At an extraordinary meeting of the Atlantic Telegraph Company, held at the London Tavern, February 3d, to consider the working agreement of the Anglo-American and French Cable Companies, the chairman stated that, to provide for the working expenses, pay the Anglo-American 125,000*l.* per annum, and the Atlantic shareholders 8 and 4 per cent., they would require a receipt of 670*l.* per day. Now let them look at the facts as they actually were. The 3*l.* 7*s.* 6*d.* tariff, which had lasted for nine months up to May 30, produced, on an average, 650*l.* daily; the 2*l.* tariff, which was in force from June 1 to August 9, produced an average daily receipt of 499*l.*; and the 30*s.* tariff, up to December 31, produced only an average daily receipt of 415*l.*, and during the present month it had been further reduced to an average of 390*l.* daily. This continued falling off in their receipts brought forcibly to the minds of the directors of the Anglo-American the evil consequences which must inevitably follow upon competition, and made them anxious to arrive at some means of coming to a satisfactory arrangement with the French Company. Up to the present time the Western Union Telegraph Company of the United States, which commanded nearly the whole telegraphic communication throughout the Union, had handed over to this Company, under an agreement made some time since, the whole of the traffic coming from America to this country. By this means their receipts, as compared with the French cable, had been exceptionally large. The French Company, however, not pleased with getting so small a proportion of the traffic from America, intimated to the chairman of the Western Union Company that, unless he gave them a fair proportion of the traffic, they would be obliged to make lines to the principal commercial centres of the Union, in order to get it themselves. Upon that the President of the Western Union Company notified them that, unless they came to some arrangement with the French Company for the division of traffic, he would be obliged, in the interests of his own Company, to accede to the proposals of the French Company, notwithstanding the agreement which had hitherto subsisted between them. These varied circumstances had naturally had great weight with the board, and when the Anglo-American saw the continued diminution of receipts, they came to the unanimous resolution that it was desirable to have a fusion of receipts with the French Company. The directors of the Atlantic then felt that the ground was taken from under their feet, and that they could no longer refuse an amalgamation of receipts, and the result of the deliberations between the two boards was now before the proprietors, and the directors of this company urged the acceptance of the same—believing that, unless the agreement was carried out, the property of the shareholders would be of no value whatever. In conclusion, the Chairman moved a series of formal resolutions approving the joint-purse agreement, involving a division of gross receipts in the proportion of 63½ to the Anglo-American, Atlantic and Newfoundland Companies, and 36½ to the French Company; providing for the creation of a new stock, out of which the Anglo-American were to receive 1,200,000*l.* and the Atlantic 375,000*l.*; the existing debentures of the latter company, not exceeding 100,000*l.*, to form a first charge upon the undertaking, each 100*l.* of preference stock in the Atlantic Company to receive 43*l.* of new stock, and each 100*l.* of original capital to receive 16*l.* of the same stock, and authorizing the directors to apply to Parliament for a bill to give effect to the foregoing arrangements.

The Chairman, in reply to questions, said that, at the present rate, the receipts would amount to 346,915*l.* per annum. Equitable arrangements had been allowed to compensate this company for having two and the French only one cable.

The resolutions were adopted *serialim*.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion.

No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., March 9th.

TO THE EDITOR OF THE TELEGRAPHER.

So little interest is felt in telegraph matters by Congress this session that you will have to find some other caption for my communications than "Congress and the Telegraph." Unless my observation and judgment are at fault, all the postal telegraph schemes are practically dead for this session. Neither the hermaphrodite arrangement proposed by Mr. Hubbard, or the Government telegraph, pure and simple, of Mr. C. C. Washburn, appear to excite any especial interest. The stunning effect of the "burst up" of the English Government, in satisfactorily managing the telegraph, has for the time at least destroyed all chance for the success of similar undertakings with Congress or the people.

On Thursday of last week Mr. Wood, of New York, reported a bill to regulate interoceanic telegraph communication with foreign countries. The bill and report were ordered printed privately for the use of the Committee, and recommended, to be further examined and hereafter reported back to the House.

The report gives a history of all ocean cables, including those of the French and English, connected with this country. The bill is designed to regulate all such cables, based on the principle of reciprocity; their neutrality not to be affected by war; this end to be secured by treaty with foreign Powers. It is officially known here that the French Government is willing to withdraw the monopoly of twenty years given to the French Cable Company, and give to Americans the same privilege to lay Atlantic cables; in other words, perfect equality in the premises.

On Monday last Mr. Washburn offered a resolution (which the House had previously refused,) to suspend the rules, to allow him to offer without notice, authorizing the select committee on the postal telegraph system to inquire into the whole subject of telegraphing in the United States, and to send for persons and papers. A motion to suspend the rules, so as to obtain immediate action, was rejected by a vote of 41 to 75, and the resolution went over under the rule.

It is doubtful whether, when the resolution comes up in order even, the House will give to the committee the power asked for; as sending for persons and papers, at the unlimited discretion of the chairman of a special committee, is apt to prove an expensive operation.

CAPITOL.

Defeated but not Subjugated.—The Duty of the Fraternity as regards their Organ.

PITTSBURG, PA., Feb. 28th.

TO THE EDITOR OF THE TELEGRAPHER.

POSSIBLY a few items from the Pittsburg boys will be interesting to your many readers. I have expected, and in fact waited, that those more able should perform the duty of "putting us upon the record," as regards the late "onpleasantness," and concerning the present situation and prospects.

All the operators (twenty-three) in the Western Union office in this city left their positions promptly, after being perfectly satisfied as to the justness of their cause. Prior to this action two operators, known to have written communications for THE TELEGRAPHER, were told by Mr. T. B. A. David, ex-Superintendent, that unless they recanted, and published in THE TELEGRAPHER as untrue statements in regard to this office which were true, and can be sworn to by every man in the office, they would be placed upon the "black list;" and he further asserted, vehemently, that "he had the power to do it;" that General Stager had shown him the letter in question, and instructed him to dismiss the guilty offenders. A strike seemed imminent, but was happily avoided by the collision occurring at a more distant point. Then it was that our two correspondents were begged to assist them, "but, like true philosophers, they would not."

At the present time nearly all who engaged in the strike have resumed their former positions by signing a document renouncing the League, and promising never to join a similar organization.

Mr. J. F. Hughes, E. W. H. Cogley and B. F. Gilmore thought the terms too degrading, and have obtained situations with the Pacific and Atlantic Company; Mr. McKeever and Mr. A. McCoy divided the funds of the League and emigrated, the former going South and the latter to his home in Nebraska. All that applied got

their former situations, nothing being said as to salary. At the end of the month it was found that the salaries of a few had been reduced, several increased (strange as it may seem), but the average remains about as before the strike.

Our Superintendent, Mr. Rowe, is doing the "square" thing in all respects, so far as he can, without reflecting upon Mr. David's management, but as rapidly as possible he cuts himself away from his restraining influence, and every one says, Amen. During the strike, whenever any of our Committees came in contact with Mr. Rowe, conversation of a most friendly character ensued. We all feel satisfied that, so long as uninfluenced by the supercilious and unctious David, Mr. Rowe will continue to win "golden opinions" from all under his supervision.

I have looked for a more general expression of fact and opinion from all sections of the country affected by the strike, but in vain, for the hard hearted, unyielding monopoly, succeeding in crushing the League, would now annihilate THE TELEGRAPHER—witness its embargo upon its correspondence, and by proscribing those of their employees who are its subscribers. This must and shall not be. We were beaten in an open fight, and we have submitted in good faith to their terms, but we can never consent that they shall keep our consciences, or dictate what kind of literature we shall or shall not take and pay for. Let the officials of the Western Union Company be wise in their conceit, and pause in their efforts to muzzle the organ of the fraternity; let them pay more attention towards regaining their lost patronage and settling for "bulls" made by their faithful ones. An operator has little heart and less encouragement to labor earnestly and diligently for the interests of those who are trampling upon and hedging in what few liberties are left him. It seems strange that a corporation composed of men do not understand this, and discontinue the aggressive warfare upon the employee, and at least give the conciliatory plan a trial.

To the operators in other cities we say be patient and persevering, zealous in the discharge of duty; preserve your dignity as men; exercise your freedom of thought and speech, and stand by THE TELEGRAPHER as it has stood by you. It needs your aid now as it never does before, and the active efforts of every one is due in its behalf.

VIDETTE.

The O. C. and A. R. R. Line.

OIL CREEK AND ALLEGHENY }
RIVER R. R., March 3. }

TO THE EDITOR OF THE TELEGRAPHER.

WE read every week, in our "pet paper," THE TELEGRAPHER (and, by the way, I think it is taken and read by every operator on our road) of changes and bits of gossip here and there on every other road, and I can't see any reason why our brethren should not hear from us now and then. There is more business done on our ninety-five miles of road than any other known road, in proportion to its length.

Our despatcher's office is at Corry, and a splendid office it is. Trains are moved, and moved in shape, by the veterans, Messrs. Dwyer and Hendricks. Just here I would say of the latter that he has the congratulations of all his telegraphic friends, from the fact that he has lately "launched upon that untrod sea from whose bourne no bachelor returns." "Long may he wave." We have lost, in James A. Vaughan, one of our very best friends, who has given up his office at oil city to engage in other business more lucrative. The vacancy is ably filled by our old friend, Mr. Atherly. At Irvineton the P. & E. Junction office still continues to flourish under the careful management of our good "League" member and friend, Harry Berry. A new office and station has lately been opened at White Oaks, and is in charge of Charlie Brown. More anon. "X."

Telegraph Matters in California.

SAN FRANCISCO, Feb. 28th.

TO THE EDITOR OF THE TELEGRAPHER.

NOTICING a communication from Messrs. Lillis, Hoag and Post, published in your paper, which has caused considerable comment among the operators on this coast, a few words from one who knows all the circumstances would not, perhaps, be out of place.

The honor and integrity of the three gentlemen named is unquestioned, but at the same time they are no better informed than those who have the honor of the T. P. L. attached to their names. Why does not Mr. Gamble or Mr. Mumford vindicate Mr. Sawyer? they are the proper persons. Their silence looks anything but flattering to him.

At the beginning of the strike matters appeared very unfavorable for the character of Mr. Sawyer, and, at the first, rather led to the belief that he was the betrayer; but previous to and since its culmination I have watched more closely, and now believe that our traitor was one

who stood high in the estimation of the League. Facts are not yet clear enough to show the party up, but should I get hold of them, rest assured his name will be given.

If Mr. Sawyer is really guiltless I hope the proper persons will come to his rescue, for surely the "card" published by Lillis & Co. does him little justice, providing he deserves exculpation.

Telegraph matters on this coast are rather quiet. Most of the strikers have found employment. Those who have returned to work for the W. U. Co. have generally accepted positions at reduced salaries.

Negotiations are now pending between the Atlantic and Pacific Telegraph Co. and the Central Pacific R. R. Co. for the use of the latter's lines. Should this be effected we can soon look for an overland opposition, as arrangements have already been completed with the Union Pacific R. R. The people of California will rejoice at this, for it is a want which has long been felt by the business community and press. Cheap rates will greatly increase the overland business, and there will doubtless be enough for both companies.

Allow me to say a few words in behalf of American Compound Wire. Wherever it is in use on this coast it gives the greatest satisfaction, and well deserves the well written article contained in THE TELEGRAPHER of Feb. 19th. From all accounts it has stood the storms of the present winter better than any of the other lines.

IXION.

A Defence of American Operators.

NEW YORK, March 9.

TO THE EDITOR OF THE TELEGRAPHER.

So long as Mr. Craig confined himself to the merits of the Little Automatic System, varied only by denunciations of Mr. Westbrook's invention, there has been little desire on the part of the fraternity to enter into the discussion, it being the general belief that both systems are practically useless, and will not prove equal to the public demand for accuracy and despatch.

It is not my purpose, however, to decry the automatic systems, but merely to refute the slanders on the skill of our American Morse operators. Whatever may be the failings of the Morse system, it cannot be denied that the operators have made the most of it, and the numerous tests of speed and accuracy have more than neutralized the effect of the comparatively few errors which are made, when we consider the enormous extent of the business daily transmitted in this country.

Before Mr. Craig claims admission to the columns of a telegraphic journal he should study upon the business which he proposes to engage in, and not come before us saying that the Morse system cannot be worked over 250 miles in independent circuits, and that the average blunders of an expert operator, merely in manipulation, are equal to seven per cent.; that is, out of every thousand words the sender "bulls" seventy.

I object to the columns of THE TELEGRAPHER being used by an outside party to disparage our hard earned reputation, in order to foist upon the public a system of telegraphing which has not a single bona fide claim upon which to base the visionary pretensions of its prime minister.

If I am rightly informed, the Morse and Bain systems of recording have been superseded by "sound" reading, for the reason that the latter method was not only more rapid but more accurate. If Mr. Craig, or any other man, can translate messages into the punched Morse alphabet at the rate of 800 words per hour, transmit them over a 2,000 mile circuit at the rate of 20,000 words per hour, making a clear, intelligible record, that can be deciphered by "infants," and re-translated into messages ready for delivery, and "always with unerring accuracy," he will be compelled to secure the services of a class of human beings far nearer perfection than any who have yet been brought into existence. It remains to be seen whether these "unerring" prodigies can be obtained at one dollar per day.

The public and the press may swallow this dose in advance, but until experience has shown the immense superiority of this system over the Morse, or combination, I shall remain an UNBELIEVER.

Queer Notions about the Telegraph.

MISSOURI, Feb. 21

TO THE EDITOR OF THE TELEGRAPHER.

MISSOURIANS have some very queer notions about the telegraph; for instance, a few days ago I was requested by one of them to forward his carpet bag to Kansas City immediately by telegraph. He was referred to the express office. A common inquiry is, "Mr., can you tell what that says when it is picking away that way?" and then follows a long explanation, of course, until greeney is satisfied. Operators see pretty good times in this State, especially those under Mack. More anon. GREELEY.

PERSONALS.

Mr. C. H. NORRIS and Mr. HARRY CHITTENDEN have resigned their positions on the U. P. R. R., at Aspen Station, and have accepted positions on the Kansas Pacific R. R., at Wyandotte, Kansas.

Mr. J. F. RILEY, of the Hartford, Conn., Franklin office, has resigned, and is at present rusticated in this city.

Mr. EDWARD W. NEIL, of the Hartford, Conn., Franklin office, has resigned, and is temporarily stopping in New York.

Mr. JOHN M. PETERS, one of the proscribed Committee of the League, during the late strike, has taken charge of the dry goods department of the *N. Y. Bulletin*.

Mr. E. L. PEARSON has accepted a position in the Western Union office, at Sacramento, Cal.

Mr. M. F. ADAMS is in San Francisco, Cal., looking for a position. Is as jolly as ever.

Mr. J. J. CURRAN is operating at the Alameda Wharf office, at San Francisco, Cal., for the Union Pacific R. R.

Mr. J. E. TURNER is agent for the Central Pacific R. R. Telegraph in San Francisco, Cal.

Mr. SAMUEL RANKIN has been appointed manager of the branch office of the Western Union Company, at San Francisco, Cal.

Mr. ARTHUR T. JONES has accepted a position as operator at the shops of the Chicago and Northwestern Railway Co. at Janesville, Wis.

Mr. W. R. FOREST, formerly of Crystal Lake, Ill., office, has taken the position previously filled by Mr. JONES at Woodstock, Ill.

Mr. EDWARD T. GREENE, Manager of the Pacific and Atlantic Telegraph Co. at St. Louis, Mo., has been appointed circuit manager from St. Louis to Dubuque, with the same company.

Mr. E. C. STEWART, lately with the Franklin Co. at Washington, D. C., has resigned, and returned to service with the Western Union Company.

Mr. E. D. CUDLIP has accepted a situation with the Franklin Company at Washington, D. C.

THE TELEGRAPH.

(By Atlantic Cable.)

THE ENGLISH TELEGRAPHS.—MORE APOLOGIES BY THE POSTMASTER GENERAL.

IN the British House of Commons, March 4th, Earl Hartington, the Postmaster General, made another explanation in regard to the unsatisfactory condition of the Postal Telegraph service. He ascribed the delays at London and Liverpool, which had caused so much complaint, to the right of priority conceded to the members of the stock exchange, for whose convenience other correspondence had to wait.

FRENCH MONOPOLY OF OCEAN CABLES.

PARIS, March 5th.—The official journal publishes a decree to-day, granting the permission of the Government to lay a second cable from the shores of France to Algeria. This is accepted as establishing the fact that all monopoly in ocean cables, is abolished.

ANOTHER TRANSATLANTIC CABLE.—COLONIAL UNION BY TELEGRAPH.

LONDON, March 6th.—A project is on foot for laying a new transatlantic cable, which is to be smaller and lighter than those heretofore used. It is estimated that the cost of the cable will not exceed £250,000.

A scheme for connecting England with all her colonies by telegraph is talked of.

POSTAL TELEGRAPH AND THE PRESS.

LONDON, March 7th.—A meeting of the representatives of the Press Association has been summoned to consider what action is required of the public journals in consequence of the continued mismanagement of the telegraphic service by the postal authorities.

CABLE NEUTRALITY AND PROTECTION.

VIENNA, March 8th.—The Austrian Government has authorized the Baron Von Lederer, its Minister at Washington, to represent Austria at the conference suggested by President Grant for the better protection of ocean telegraph cables.

FOREIGN TELEGRAPHIC NOTES.

THE manufacture of the West India and Panama cable is steadily progressing, over 1,500 miles are finished, and the manufacture is progressing at the rate of over 150 miles per week.

The Falmouth, Gibraltar and Malta cable is nearly finished. The necessary arrangements for shipping are being pushed forward, and we hope shortly to announce the completion of the work.

In consequence of the great activity in the manufacture and laying of submarine telegraph cables, the works of Mr. William Hooper, at Mitcham, have been purchased, and will hereafter be carried on under a limited liability company, with the title of "Hooper's Telegraph Works," the first work to be executed being the "China and Japan Extension Cable." The amount to be paid for the works at Mitcham, will be £65,000.

Mr. Hooper will be connected with the company as managing director, so will be enabled to continue attention to the manufacture of his india rubber core.

Professor Blaserna, of Palermo, has published the results of some experiments on induction currents.

The directors of the Indo-European Telegraph Company, in their report, presented to the shareholders in London, state that the first issue of 17,000 shares of twenty-five pounds each in the capital of the company, amounting to £425,000, has been completed, and the final call made on the 14th September last having been promptly responded to, the whole capital issue is fully paid up.

TELEGRAPHIC BREVITIES.

THE Commissioners of the Fire Department of New York have ordered that the police shall prevent the flying of kites in the city, on account of the difficulty caused to the telegraph wires, by the kite tails becoming entangled with the wires. This action is rather hard on the boys, but kite tails are the cause of constant and important troubles to all telegraph lines in the streets of the city.

Twenty three thousand acres of wood and mineral land in West Virginia were, on Thursday, the 10th ult., purchased by the International Land and Labor Agency, Birmingham, for parties in that town, by Atlantic telegraph. The first sale by cable.

The American Compound Wire.

WE have received a copy of an interesting report of the General Superintendent of the Great Western Telegraph Company, Mr. A. H. Bliss, to the President of the company, relative to action of the November storm, which prostrated telegraph lines so generally throughout the Western States. Mr. Bliss, says:

"The wire of the Great Western Telegraph Company, from Chicago to the Union Stock Yards, a distance of six miles, was broken about fifteen times, and about fifty insulators and brackets were broken. For this distance the wire used is the No. 9 galvanized iron. From the Stock Yards, a distance of two hundred miles, the line was broken, in all, six times. For this distance the *American compound wire* is used exclusively, and so far as I can learn, not more than four insulators and brackets were broken; I travelled over a large portion of this distance on the cars, and viewed the effect of the storm, as shown by the dilapidated condition of the Western Union Company's galvanized wires over the same section. Many of their poles and hundreds of brackets and insulators were broken. From the best calculation I could make the compound wire averaged only one break to fifty of the iron wire. While hundreds of poles which were set twenty to thirty to the mile, supporting the iron wire, were broken, I have not learned of one supporting compound wire (sixteen to the mile) being injured in the least."

A French Account of the Telegraphers' Strike.

THE following account of the recent strike of the Western Union employés is from the *Journal de Telegraphie* of Paris, the leading telegraphic publication in Europe. The *Journal* is rather confused on some points, but its sympathies are evidently with the employés and not with the management of the company:

"A strike, strange as it is unusual, has taken place in America. The Franklin Company and the Bankers and Brokers' Company are of little importance. The Western Union Company is very perfectly organized, and is in reality the monopoly company of the United States. Its capital amounts to \$40,000,000, and its lines cover the entire country. It is a powerful company, and is tyrannical towards its employés, and is ill spoken of by all who are connected with it in business matters, and is

equally condemned by the Press and the Government. It is said that the United States, imitating England, intend to acquire and assume control of the telegraph lines throughout the country. This statement does not appear to be well founded, as the monopoly still continues and renders itself insupportable to its employés, whose pay has been diminished twenty-five per cent.

"The operators, in consequence of the treatment received, formed a secret Protective League, which rapidly extended over the whole Union.

"The strike commenced at San Francisco and extended east to New York and throughout the entire South, nevertheless the Company could retain a tenth part of its employés, and with their assistance continued to partially work the lines. Finally, the strikers acceded to the terms offered by the company, and the service soon appeared to have recovered its former order.

"One of the curious incidents of this strike is the use made by the strikers of the company's lines for corresponding among themselves. It is well understood that the company found the knowledge of the plans of the dissatisfied thus obtained of great value and profit."

Severe on Western Union Officials.

MR. H. D. CRAIG, in a communication to the *New York Herald* of Tuesday last, in reply to strictures and statements of the imbecile official organ of the Western Union Company, thus scarifies various Western Union officials, especially Mr. PRESCOTT, the electrician and logician of that company:

"Now, when it is considered that the English Government have determined to use the Wheatstone automatic system in their 'first class' offices, and rate it first, Hughes second, and Morse after the slow and antiquated 'single needle' and 'bell' systems, it is not to be wondered that the President of the Western Union Company, and the grinder of his official hand-organ, should begin to 'hedge'; and if the company can find any way to escape paying the \$50,000 due on the Bain-Hummaston automatic apology, I have no doubt they will yet bring it out and claim for it all the wonderful qualities which their scientific mentor discovered in it ten or fifteen years ago, when he declared that it was capable of telegraphing at the rate of 20,000 words per hour, or some twenty-five times faster than is ordinarily done by the Morse hand key system. The fact that this brilliant gentleman has since proved to his own satisfaction, and the delight of the managers of the W. U. Co., that it is impossible to telegraph by automatic machinery through long lines at any greater speed than can be done by the Morse system—say ten words per minute, in circuits of 1,000 miles—may be a little embarrassing to him; but a genius of his stamp, who has publicly proved that a good telegraph line can be built for sixty dollars per mile, and that it cannot be built for less than \$400 per mile; who has proved that by the Bain-Hummaston automatic system 19,500 words can be transmitted per hour over a single wire, and with equal clearness has proved that not over ten words per hour can be telegraphed by that or any other system in circuits of 1,000 miles—such a genius, I say, may be safely trusted to lift himself and his employers out of any possible difficulties arising from official or unofficial statements designed to mislead stockholders, the press or the public."

Telegraph Operator Drowned.

ROBERT C. LOOMIS, telegraph operator at Pass a l'Outre, below New Orleans, was drowned near that place, March 2d, by the upsetting of a boat.

New Patents.

For the week ending March 1, and bearing that date.

No. 100,462.—ELECTRO-MAGNETIC REGULATOR FOR DAMPERS OR VALVES. George Miller, Steamburg, Fort Riley, Kansas.

Claim.—The combination with the armature of an electric apparatus of the levers *a''* and *b*, the latter being provided with spur-gears *b' b''*, cog-wheels *c' c''*, double system of train work *B B'*, operated by weights, and loose cog-wheels *d*, substantially in the manner described, and for the purpose of communicating motion alternately in opposite directions to the valve.

For the week ending March 8, and bearing that date.

No. 100,666.—TELEGRAPH POLE. E. Freeman Prentiss, Philadelphia, Pa.

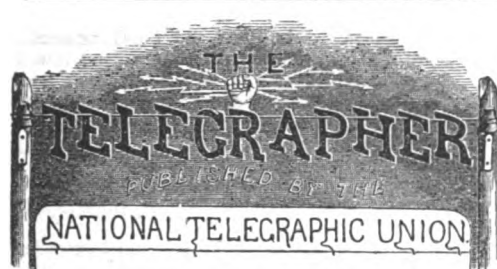
Claim.—A telegraph pole which consists of the cast iron base *a*, with its socket *b*, in combination with the tubular sections *c*, *d*, *e*, castings *f*, and the insulator arms, substantially as set forth.

MARRIED.

KING—LYMAN.—At Tunbridge, Vermont, March 3, by Rev. M. MORRIS, CHARLES C. KING, of the Western Union Telegraph Company, Albany, N. Y., and Miss LULA J. LYMAN, daughter of WILLIAM R. LYMAN, Esq.

DIED.

FULLER.—At Chicago, Ill., Feb. 28, Mrs. DORA O. FULLER, wife of George E. FULLER, operator in the Fire Alarm and Police Telegraph office, at Chicago.



SATURDAY, MARCH 12, 1870.

J. N. ASHLEY.....Publisher and Editor.

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ARE THE WESTERN UNION EMPLOYÉS
SLAVES?

SINCE the failure of the movement of the operators, in January last, the officials of the Western Union Company, or some of them at least, seem to regard them as slaves, and as having no rights that should command respect. Humiliating conditions were imposed upon those, or most of those, who participated in the strike, upon their return to work, and no means omitted which would have a tendency to impress upon them the fact that henceforth, so long as they remained in the telegraphic business, they must uncomplainingly submit to any and all exactions that might be imposed upon them. It was believed that the spirit of the operators was completely broken, and that henceforth they could be managed as should be deemed expedient by those who occupied the higher positions under the company.

One obstacle remained to the realization of this millenium. The telegraphers of the United States have an organ through which they can be heard, and their rights maintained. THE TELEGRAPHER has always been an eyesore to men like T. T. ECKERT, who are by the fortunes of war elevated to positions for which their ignorance and lack of ability totally unfit them. General STAGER also had been aggrieved because the misdoings of his subordinates had been exposed, and reforms in certain offices compelled thereby. There is, in fact, a general antagonism among the higher officials towards the organ of the telegraphic fraternity, because it stands in the way of their complete and unrestrained control of the employés of the company subordinate to them.

The failure of the movement in January last was regarded as affording them the long desired opportunity to suppress THE TELEGRAPHER, and leave the namby-pamby official organ of the Western Union Company—which is in sympathy only with the management, and bound to sustain the acts of the officials of that company, right or wrong—as the only telegraphic publication in the country. Accordingly, orders were issued to the District Superintendents, instructing them to stop the circulation of the paper among the operators. Papers were drawn up, which the subscribers in the employ of the Western Union Company are required to sign, under the threat, expressed or implied, of dismissal, agreeing to discontinue taking THE TELEGRAPHER, and not to render any further support to it.

This is certainly a most extraordinary and unprecedented manner of managing matters in a free country. It indicates a close study of the manner in which despotic governments secure unanimity of support from the press. It is safe to say that only Western Union managers would have attempted such a gross outrage upon an intelligent class of employés.

We could not believe that this action could have been taken by order of the President or Executive Committee of the company. We accordingly addressed a note to Mr. ORTON, the President, calling his attention to the matter, and respectfully asking if it was ordered or sanctioned by him, or by the Executive Committee. He replies, under date of March 2d:

"I find your note of February 26th, on returning to my office after a few days' absence at Washington.

* * * * *

"In reply, I have to say that your note conveys the only information of the proceedings to which it relates that has reached me." He further says that he concedes to the employés of the company the same right to purchase and read the paper as they have to discard it, and adds: "I do not propose to make its 'discontinuance and discountenance' a test of competency for our service."

It will thus be seen that the Executive authority of the company repudiates the action of the aggrieved Superintendents. We expected no less. Mr. ORTON is an able and intelligent man, and must see the absurdity of waging this kind of warfare upon a paper because it is published in the interests of the operators instead of the proprietors of telegraph lines. We have no doubt but that he, as well as those of inferior calibre in the service of the company, has regarded THE TELEGRAPHER as being an obstacle to such a management of their subordinates as might be considered desirable, but he is a man of too much sense to attempt its suppression by force of arms.

We do not believe that telegraph employés are yet so utterly lost to every manly sentiment as to allow themselves to be thus dictated to in regard to their support or non-support of their organ. If they quietly submit to this outrage, they may expect a condition of things in the future which will render telegraph service intolerable to any person having the slightest self-respect. It is bad enough now, but has presented nothing in the past which can at all compare with the ignominy and degradation which must attach to it in the future if such despotism should be submitted to.

We have had the most convincing evidence that the past course of the paper has been heartily approved by the most intelligent and respectable portion of the telegraphers of the country. We have received hundreds of letters from Western Union employés, thanking us for our outspoken and effective support of their rights. Under these circumstances it will be evident that any failure to support the paper now would arise from a fear of the consequences threatened by the unscrupulous and malignant enemies who are endeavoring to use their positions to remove us from their path. We have but little personal interest in the result of this new contest. Our constituents, the telegraphers of the United States, are very greatly interested in it. We leave it to them to decide whether they will hereafter be bond slaves, or respected and self respecting members of the community.

In conclusion, we would advise any employé who may be affected by the refusal to assent to his or her own degradation, to appeal directly to Mr. ORTON for a revision of the case and for justice. Such an appeal, we have reason to believe, would not be disregarded, but would receive attention, and that proper redress would be afforded.

Our New Premium Offer.

As is customary with us, every spring and fall, we this week present a Premium offer as an inducement to the friends of THE TELEGRAPHER to exert themselves to increase its subscription list. We trust that every telegrapher who believes that the telegraphic profession deserves something more than the mere privilege to live and work, will recognize the obligation to contribute to the extent of his ability to the support of the only organ and advocate of the profession in this country and the world.

The unscrupulous agents of a would-be telegraphic

monopoly are trying to destroy this paper. They know that while it is published their attempts at extortion from, and oppression of telegraph employés, will be constantly exposed. The fear of such exposure hitherto has kept them from tyrannical and oppressive practices, which would ere this have rendered telegraph service odious and unendurable. It is not too much to claim that, but for the existence of THE TELEGRAPHER, the salaries of telegraph employés would to-day and for the last year have averaged twenty-five per cent. less than they now do. It is difficult to estimate the influence of a journal like this, but the importance of sustaining it must be apparent to every person who has the welfare of the profession at heart. It would be an everlasting shame and disgrace if the hirelings of the Western Union Company, such as ECKERT and STAGER, should be permitted to glory in having succeeded at last in accomplishing the destruction of THE TELEGRAPHER. For this they have plotted and planned (and would have prayed, were it not that they realize the fact that the prayers of the wicked are unavailing) for years. We do not propose that they shall thus succeed, and we call upon every telegrapher who is not hopelessly in bondage to these men to aid us in resisting this last attempt of officials unduly conscious of their own importance, and inflated with their recent victory over their employés.

The Premiums offered are exceedingly liberal, and worthy the attention of our friends. We shall expect soon a generous response to our present call, which shall enable us to bring the sixth volume of THE TELEGRAPHER to a successful close, and commence the seventh under prosperous auspices.

Characteristic Shameless Dishonesty.

THE official organ of the Western Union Telegraph Company quotes a sentence from a communication to THE TELEGRAPHER, for which it is distinctly stated that we do not hold ourselves responsible, as the sentiment of the paper. This is a characteristic exhibition of dishonesty, and shows the unreliability and low character of the publication which is guilty of such a rascally perversion.

Change of Agents.

HEREAFTER Mr. WM. M. SPINK will act as the agent of THE TELEGRAPHER at Cincinnati, Ohio. He may be found at the Chronicle office. Mr. C. G. DEMOLLY, agent of the American News Association, has accepted the agency, and will look after the interests of this paper at Philadelphia. We commend both of these gentlemen to our friends, and hope that they may receive cordial coöperation and assistance in their efforts to maintain and increase the circulation of the organ of the practical telegraphers of the country.

Operators Wanted.

WE are requested to state that first-class Railroad operators are wanted to go to Kansas; salary, eighty dollars per month, including board. Application should be made to B. F. JOHNSON, Western Union Telegraph office, Merchants' Exchange, Philadelphia.

New Telegraph Connection with the Pacific.

At the Annual Meeting of the Stockholders of the Union Pacific Railroad, held at Boston, Mass., on Wednesday last, the President of the company said:

"For the purpose of utilizing our telegraph line we have made a connection with the Atlantic and Pacific Telegraph Company, through which we are getting a large portion of our telegraph service free, and have the expectation of realizing a handsome income from the \$3,300,000 of stock we receive of the Atlantic and Pacific Telegraph Company for the use of our line for commercial purposes. We shall be under the necessity of putting up one or two additional wires should this company make a connection with the Central Pacific Company, as they now expect to do, and secure a fair share of the California business."

PREMIUMS! PREMIUMS!!
FOR THE SPRING OF 1870,
TO THE FRIENDS AND SUPPORTERS
OF
"THE TELEGRAPHER."

It has been the custom of the present publisher and editor of
"THE TELEGRAPHER"

to offer, in the Spring and Fall of each year, inducements to the
 friends of the paper to use extra efforts to

INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their
 zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA,
 that the unscrupulous agents of the great TELEGRAPH MONOPOLY
 OF THE WORLD, the Western Union Telegraph Company, annoyed
 and angered at the boldness and faithfulness with which this
 paper has MAINTAINED THE RIGHTS, and exposed and denounced
 the OUTRAGES AND INJUSTICE practised by them upon its em-
 ployés, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers,
 that subordinates be required to discontinue the paper, on pain
 of dismissal.

The President of that Company, however, distinctly disavows
 this action, and says, in a communication to the editor of THE
 TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S)
 'discontinuance and discountenance' a test of competency for our
 service."

It will be seen, therefore, that this movement is one incited
 on the part of certain of the subordinate officials of that Company
 by personal spite and chagrin, because the paper has remained
 UNSWERVINGLY FAITHFUL to the interests of the Practical Tele-
 graphers of the country, and could not be used for the personal
 ends of these disgruntled officials.

It remains to be seen whether the Practical Telegraphers of
 this country CAN BE RELIED UPON to stand by those who seek
 to secure to them JUSTICE AND FAIR TREATMENT.

In addition to the inducement offered above to exertions in
 support of the paper, we offer the following

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This offer will be good until May 31st, 1870.

For TWENTY-FIVE SUBSCRIBERS we will give to the person
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For TWENTY SUBSCRIBERS a No. 1 TELEGRAPH KEY, either
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 "Modern Practice of the Electric Telegraph" or "Sabine's Electric
 Telegraph."

For FIFTEEN SUBSCRIBERS a No. 1 TELEGRAPH KEY, any
 pattern that may be desired.

For TEN SUBSCRIBERS, the Fourth Edition of "Cully's Hand-
 book of Practical Telegraphy."

For SIX SUBSCRIBERS, "Nozd's Inductorium" and "Sabine's
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For THREE SUBSCRIBERS, F. L. POPE'S "Modern Practice of the
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In addition to the above, we will give to the person who shall,
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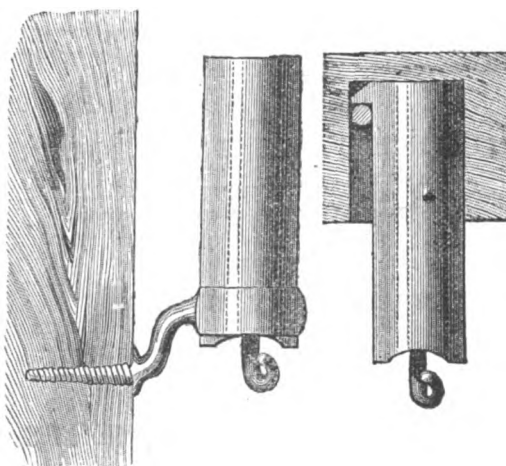
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A Journal of Electrical Progress.
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SIXTH VOLUME.

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THE TELEGRAPHER.

JOURNAL OF ELECTRICAL PROGRESS.

Vol. VI.—No. 30.

New York, Saturday, March 19, 1870.

Whole No. 192.

VELOCITY OF THE ELECTRIC CURRENT.

BY PROFESSOR G. W. HOUGH.

THE velocity of the electric current over land lines of telegraph has been the subject of numerous experiments during the past twenty years. The great discrepancies existing between the different determinations led us to suspect that the so-called velocities were mixed up with some other phenomena, since they were found to vary between 13,000 and 30,000 miles per second.

My attention was especially called to the subject by Mr. C. S. Jones, manager of the Albany W. U. office. He expressed a desire to undertake some experiments for velocity determinations, which were finally begun in April last.

Whatever value may attach to these results Mr. Jones is entitled to an equal share of credit, since, without his assistance and cooperation, it would have been impossible to make them. We would also express our thanks to the officers of the W. U. Telegraph Co. for the use of the necessary wires, batteries, etc. We might here state that the company have, on other occasions, shown great liberality in furnishing us wires, for the use of scientific investigations.

The following table will exhibit the principal results heretofore deduced for the velocity of the electric current:

DATE.	LENGTH OF CIRCUIT.	VELOCITY PER SECOND.	OBSERVER.	REMARKS.
1833-4.	1/2 mile	298,000	Wheatstone	Leyden Jar
1849.	880	18,700	Walker	Relay
Oct 31st.	1849	16,000	"	"
Nov.,	1849	28,500	Mitchel	Galv. Needle
1850.	260 Iron	60,000	Fizeau & Gounelle	Relay
1850.	130 Copper	114,000	"	"
1850.	1045	15,000	Gould	Chemical Telegraph
1850.	447	17,000	Walker	Diff. Galv.
1850.	230	13,000	"	"
1854.	104 Iron	115,000	Guillemin & Burnouf	"

An examination of this table reveals no law except that, apparently, the shorter the circuit, and the more delicate the instrument, the greater is the velocity.

Circuits were secured on the nights of April 8th, May 20th and May 27th; but, owing to want of uniformity in the adjustments and manipulations of the instruments, only those results obtained on the 27th can be employed for determining the law of propagation.

RELAYS.

Three different relays were used in these experiments, the approximate resistance of which are as follows:

No. 1. 30 miles of No. 9 wire, Tillotson, maker.
" 2. 55 " " Day,
" 3. 35 " " Williams,

Nos. 1 and 3 were placed at the ends of the circuit. No. 2 could be switched in either end at pleasure, or cut out entirely.

SWITCH BOARD.

A special switch board was constructed, which was capable of the following manipulations:

1. Relay No. 2 could be thrown in either end of the circuit.

2. Relay No. 2 could be thrown out entirely.
3. The clock could be made to open and close the circuit at either end of the line.
4. Each relay could record the clock beats on the chronograph.
5. Each relay could work a local sounder.

For accomplishing these changes ten movable switches were necessary.

CHRONOGRAPH.

The chronograph used in these experiments is a revolving disk, provided with two recording pens, worked on an open circuit. It is capable of recording time to the one thousandth part of a second, and has been fully described in vol. I, *Annals of Dudley Observatory*.

The local circuit passing through the sidereal clock included chronograph pen No. 1, together with a small pony sounder, arranged to close the main line circuit in the same manner as an ordinary relay. When the clock was thrown in circuit its beats were recorded on the chronograph by pen No. 1. As the sounder worked simultaneously with the chronograph pen the main circuit would necessarily be opened and closed at the same instant, and the relays would be operated. If, then, the necessary connections were made, the relay would record the clock beats on the chronograph with pen No. 2. Now, in case the length of the main line was only a few miles, and the armature time of the magnets zero, the two chronograph pens would record the clock beats simultaneously. This condition can be secured by increasing the armature time of pen No. 1, so that it shall equal the sum of the armature times of the pony sounder, relay and pen No. 2. We have, however, thought it preferable to reduce all the armature times to a minimum, and determine it for each separate magnet.

ARMATURE TIME.

The armature time depends on the following conditions:

1. Strength of Battery.
2. Tension of Spring.
3. Distance of Armature.
4. Motion of Armature.
5. Permanent Magnetism.

In order to eliminate as much as possible the source of error arising from variations of armature time, 2, 3 and 4 are reduced to a minimum. More especially is this necessary for (4), the motion of the armature. In our final experiments the play of relay armature was reduced to one or two thousandths of an inch.

When (5) is zero (which is the case with a local circuit or short line), and (2), (3) and (4) are reduced to a minimum, the strength of the battery does not essentially change the armature time.

In working over a long line of telegraph wire the escape is always considerable—consequently, in order to work from both ends of the circuit without change of adjustment, (3) cannot be reduced to a minimum, but will depend on the amount of escape and the strength of the battery.

In our experiments the armature time of relay, plus recording pen No. 2, was determined for each separate adjustment.

(To be concluded next week.)

Ocean Telegraphy.

THE *London Times*, in an article on Ocean Telegraphy, says it is calculated that on an average a commercial message consists of 30 words. Sixteen words per minute is the rate at which a message can be transmitted and received by skillful operators, so that 30 messages can be sent in an hour. On account of the differences of time between distant parts of the earth there can be no division of the 24 hours into day and night, and ocean cables must be worked continuously by relays of clerks. Still, in order to allow for the intervals between the conclusion of one message and the commencement of another, the day is considered to consist only of 20 hours; in

which, therefore, 600 messages can be sent or received. At the present rate charged across the Atlantic these 600 messages of 30 words each would bring in a return of £2,700; and thus, allowing 300 working days in the year, a single cable to America might earn a possible annual revenue of £710,000.

The business done already shows that the commerce between two centres of activity will pay for telegrams at a rate which will not only render the wires very remunerative property, but must also speedily lead to the adoption of such lower charges as will enable the system to be employed far more generally than it is at present. Indeed, when the returns from the lines have paid the original cost, and left a reserve fund for repair or replacement, there is no reason why business should not be done at exceedingly low rates, and so as to draw to the cable ordinary messages of domestic news, now consigned to the mails only. The entire length of ocean cables laid and in progress, excluding short lines, is 20,961 miles, and the capital stock engaged is £6,925,000.

England is at present dependent on Russia for telegraphic communication with India, and it happens in this wise. Russia constructed a line to her army in the Caucasus. This cost largely for maintenance, and the bright idea occurred that if the line could only be extended to India the expense of its maintenance could be placed upon the broad shoulders of British commerce. The line was then constructed by the English from the termination of the Russian one, by way of Teheran and Tabreez to Bushire, and so through the Persian Gulf to Kurrachee. It was agreed that this line should pay a royalty of forty per cent. on its receipts for the privilege of working through the Russian wires, and the result has been not only the dependence of Anglo-Indian telegraphy upon a foreign power, but also that British subjects have paid for the maintenance of the Russian line to the Caucasus, and that the Persian line, thus burdened, has returned to its British proprietors the modest dividend of 1.3 per cent.

Another Russian military line is across Siberia and Tartary, and on to this has been "tailed" a line to Posietta, on the Japanese Sea, whereon a company, "nominally Danish," is to lay a cable to Japan and to the Chinese ports. So Russia absolutely contrives to have the English business from China pass over her wires. The *London Times* does not like this, and so urges the completion of ocean lines, to take the place of these overlaid.

Petty Jealousies of the Monopoly.

TO THE EDITOR OF THE POST.

SIR: Your sprightly sheet proves to to be the vox populi, and permit me to say a word to the business men of our city. Yesterday afternoon, about four o'clock, two boys came into our office, Chestnut below Twelfth, with a blank telegram book, and inquired if we had one of their books, "W. U. Co." I replied we had. "Yea," said the younger one, "here it is," and seizing the P. & A. Co.'s book, which was on the top, rushed down the stairway and on to Chestnut street so rapidly that he was soon out of sight. I put on my hat and followed. When opposite the Academy of Fine Arts the larger boy stopped, and pledged that the book should be returned—it was, but in what condition? Entirely destroyed. Will you, the business men of Philadelphia, tolerate such an outrage, by patronizing a company that would permit an offence as above mentioned to take place?

I say that it is outrageous, and we should set our faces hard against monopolies of all kinds. Honorable "competition is the soul of business." We have no connection or interest in either company, but favor honest, upright dealing.

—Philadelphia Morning Post.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our Correspondents. Our columns are open to free discussions on all Telegraphic subjects, without distinction of person or opinion.

No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, March 16th.

TO THE EDITOR OF THE TELEGRAPHER.

ON Friday last Senator Fenton, of New York, introduced in the Senate "A Bill to Regulate International Correspondence by Telegraphic Lines between the United States and Foreign Countries." It was referred to the Committee on Foreign Relations.

It provides that all persons shall have the right to correspond by means of international lines; that the Government shall have the same rights and privileges as are granted to foreign Governments; for Governmental use of the wires free for thirty minutes each day; that no Government shall use the line for more than an hour at a time, if another Government desires to send a message; that lines shall always be kept open, and all messages transmitted in regular order as received, except as provided in the bill. Provides for punishment of violation of secrecy of despatches, by imprisonment for not less than three or more than twelve months, and a fine of not less than five hundred dollars—and if the person offending does not pay the fine the company employing him must pay it. Provides for a classification of messages. First—Government despatches, which shall have priority; and, second, private despatches. The Government reserves the right to stop the transmission of any despatch which appears dangerous to the security of the State, contrary to its laws or to good morals. Sec. 12 provides that the Government of the United States reserves the right to suspend the service of the international telegraphs for an unlimited time, if it judges necessary, either in a general manner or for certain kinds of correspondence.

The injury or destruction of such lines within the jurisdiction of the United States to constitute piracy, and to be punished as such. The rates of compensation for messages by such lines shall be fixed by the postal authorities of the United States, and the countries connected by them, together with the owners of the cables.

The consolidation of two or more such companies, without the consent of the Postmaster-General, and upon such terms as he may determine, shall not be lawful. If two or more companies have or shall combine to fix rate of tolls, it is made the duty of the Postmaster-General, in the absence of any international convention regulating the matter, to determine the rates, and establish such rules and regulations in regard to them as he shall deem necessary. Existing cables are to be subjected to this control, which is subordinated only to Congressional action.

Subject to these conditions, to previous grants of Congress, and to State jurisdiction and property rights, the consent of Congress is granted to the laying of telegraph cables; but to cables from countries where similar privileges are not granted to companies incorporated in the United States this consent does not apply; but existing lines or cables, with the exception of the French cable, are exempt from this provision. A written acceptance of these conditions must be filed with the Secretary of State before extending any such lines within the jurisdiction of the United States.

It is declared unlawful for any international telegraph company to make contracts or agreements with any other telegraph company to secure a monopoly of the messages between the United States and Europe; and any company making such agreement must suspend operation until such agreement is annulled.

It is hardly worth while to analyze this bill and point out its absurdities. It, or anything like it, can never become a law. It should be entitled "a bill to destroy the value of investments in cable telegraphs, and to prevent future investments in such enterprises."

The bill introduced by Mr. Fernando Wood, of New York, in the House, which has been referred to in previous communications, enacts the following conditions: That the United States Government shall enjoy similar priority and privileges as any foreign Government; equal privileges for citizens of the United States with citizens of other countries in the use of such lines; priority of Government messages; all messages to be forwarded in the order received, except as therein provided; and a written acceptance of these terms and conditions to be filed with the Secretary of State.

This is a very sensible bill, and, it would seem, could not meet with any reasonable objections.

Mr. Wood, from the Committee on Foreign Affairs, has submitted a report on the French cable. The Committee say there is no just ground for the threatened discriminating legislation against the French Cable Company. While

a general law, like that of which an abstract is given above, should be speedily adopted, operating alike on all companies, it would be unwise and unjust to go back so as to affect injuriously either of the existing Atlantic or any other cables. The exclusive features of the concession by the French Government to the French Company will shortly be reconsidered and relinquished, and it is understood that that company is itself in negotiation with the French Government to secure this result. Besides, it is probable that a convention will be concluded and ratified between the two Governments, for the neutrality and reciprocity in ocean telegraph matters.

There is nothing new in regard to postal telegraph matters. Mr. Washburn is trying to collect such information as is accessible in regard to the telegraph, as Congress is not disposed to grant his committee power to send for persons and papers. The postal telegraphers, however, concede that their cause is hopeless before this Congress, and consequently now manifest but little interest in the subject. CAPITOL.

The Contemptible Efforts to Destroy The Telegrapher.—Operators not Slaves.

PHILADELPHIA, March 14.

TO THE EDITOR OF THE TELEGRAPHER.

THE recent action of the General (!) Superintendents, Eckert and Stager, in their endeavors to suppress THE TELEGRAPHER in their respective divisions, is, to say the least, mean and contemptible, and deserves, as it will receive, the detestation and scorn of the fraternity. Accept, gentlemen, my sincere thanks for this renewed expression of your appreciation of our valuable paper. The edict has gone forth. THE TELEGRAPHER is proscribed. Ye poor unfortunates of the great man-opoly, tremble! We will see. There are in the employ of this magnanimous corporation scores of liberty loving men, who will never submit to this outrage, and, much as I regret to say it (but the truth must be spoken), many

"Who, proud to kiss each separate rod of power,
Bless, while he reigns, the minion of the hour:
Worship each would-be god that o'er them moves,
And take the thundering of his brass for Jove's."

When, if ever, will this company deal justly with its employees? It is a pretty state of affairs, indeed, when any corporation dares to dictate to its employees what kind of literature they shall or shall not read. From whence comes their right to control our affairs? Their motive is apparent, and he must be blind indeed who cannot see through it. The War Department and his Adjutant, sighing for more worlds to conquer! They overstep their authority when they tell an employee "You shall not subscribe to THE TELEGRAPHER," and they overstepped their authority in acting without the knowledge of their superior officer, the President. Are we slaves, that we should obey this mandate? No; we are free men, and tell you your order is not worth the paper it is written on. We are now, and shall continue to be subscribers to this journal, your order to the contrary notwithstanding. Mr. Editor, do not be alarmed for your paper; it has hosts of friends in this city, who laugh at the efforts of the Western Union to crush it. We will work for you, and will commence our labors in the Western Union office, and get all, from the messenger boys down to the Superintendent. Eh! What next, gentlemen? Hurry along—it is time—the spring campaign is opened. Telegraphers, rally to the support of your paper. Do not let the threats of any corporation deter you. Be men. DON.

Telegraph Matters in Baltimore.—General Determination to Support The Telegrapher.

BALTIMORE, March 15th.

TO THE EDITOR OF THE TELEGRAPHER.

OUR city has not been represented in THE TELEGRAPHER for some time, and I was in hopes some abler telegrapher would give us items. The feeling of harmony and good will which was developing itself has almost died out among the operators since the strike. Although unsuccessful the majority of the men here are not disheartened, but with bright hopes await future developments. In any event, it is the general sentiment that we must never desert THE TELEGRAPHER—the organ of the operators—the friend and standard bearer of the profession. I am one of those who think the paper should exist at all hazards, and every operator should feel it incumbent upon him to cling to its support.

With one or two exceptions the old force remain in the W. U. office, but the business which went by the opposition lines during the strike has never been recovered by the monopoly. That strike was truly a god-send for the P. & A., Bankers & Brokers, and Franklin Companies. The P. & A. continue to give their Western patrons satisfaction, and their business is steadily on the increase. The B. & B. and Franklin are doing better than since the completion of their lines. The B. & B. is very popular among New York and Philadelphia patrons;

but how could it be otherwise with such an accommodating force of operators distributed at their branch offices.

The Postal Telegraph has many friends here, but there being little probability of Congress taking action in the matter the present session, I will not advance any arguments. The automatic line seems very quiet since the construction of their line between Baltimore and Washington. Telegraphically we are very quiet here. Business, which has been dull, is reviving. D.

Vidette Repudiated.

PITTSBURG, March 1.

TO THE EDITOR OF THE TELEGRAPHER.

THE communication in THE TELEGRAPHER of last week from Pittsburg, signed "VIDETTE," was evidently written by a party not connected with the Western Union office in this city. It contains several incorrect statements, as regards arrangement of salaries and degradation felt by the operators who returned to work after the strike. We certainly felt sore over our defeat, but failed to feel that we degraded ourselves. It also does our Superintendent, Mr. Rowe, great injustice. Our salaries were reduced ten per cent. by order of General Stager, but we have heard of no salaries being increased. We would respectfully suggest that outside parties should allow us to ventilate our own grievances.

PITTSBURG W. U. OPERATORS.

An Unprincipled Absconding Manager.

CHICAGO, ILL., March 8th.

TO THE EDITOR OF THE TELEGRAPHER.

PLEASE publish the enclosed copy of a note left by an absconding manager. He may desire a recommendation to get a position elsewhere, and this note will set at rest all doubts concerning his character, I think. It smacks of "total depravity" stronger than any case on record.

CHARLES H. HASKINS,
Supt. P. & A. Telegraph.

(Copy.)

RICHMOND, IND., March 7th. 1870.

To D. —

If H. — says anything, tell him, for me, that those bonds scared me off. I am in debt to the Co. about thirty-five dollars; also to Elliott, for board, twenty dollars. I owe Williams, the tailor, seven dollars. I beat the barkeepers all, I think. If I have left anything undone in the way of "bilking" please finish up for me!

I go to Dayton—thence to Columbus. Give all my sweet little girls my love, and tell them "Shoo Fly!" STAPP.

A Train Signalling Invention.

INDIANAPOLIS, IND., Feb. 23.

TO THE EDITOR OF THE TELEGRAPHER.

OUR line (the Terre Haute and Indianapolis Railroad Telegraph) has been noticed once in THE TELEGRAPHER, but the communication failed to notice an important improvement, which deserves mention. I refer to Mr. John P. Lennert's "Patent Signal Box," for signalling trains for orders, passengers or freight.

Mr. Lennert's invention consists of a tin box, containing five sheet-iron drops, two painted red, two green, and one white. The box has a sliding lamp, that, by means of a cord, can be run from the end in the office to the end outside, a distance of seven feet, where, on either side, is a round glass-covered window, answering as a white light. Cords extend to the drops and also to the colored glass (red and green), so that when an operator drops his colored signal a corresponding colored glass slides before his lamp. An operator can manipulate the whole apparatus from the inside of his office. He can signal a train from the West red, and one from the East green, white or red, at the same time, thus making a decided improvement on any other mode of signalling trains now in use.

Our company will adopt Mr. Lennert's patent at an early day, as they make it a rule to have the best of everything going in the way of equipments. Mr. Lennert is an operator, who has been in the service of this company some years, and we feel justly proud of him for accomplishing something that but to see it is to recommend it.

Our line is "business"—fourteen offices, employing twenty-one first class railroad operators—which, considering the length of the road, is pretty good for the West. The operators, with a few exceptions, were members of the T. P. L., and in sympathy with their brother operators of the strike, but, under the excellent management of Major Simpson, Assistant Superintendent of the company, no trouble arose between the company and its operators. 134.

The Burlington and Missouri River R. R. Line.

CRESTON, IOWA, March 1.

TO THE EDITOR OF THE TELEGRAPHER.

SOME time having elapsed since I have addressed you, and encouraged by the fact that you gave space in your columns to my communication, I venture another.

Having watched your ever welcome paper anxiously for an item from this line without reward, and feeling ourselves in a manner exiled, it would no doubt interest some to hear what we are doing on the Burlington and Missouri River Railroad line.

Through trains commenced running January 1st of the present year, and have continued without accident or delay, making as quick time as trains on the oldest and best managed roads in the country, which certainly speaks very highly for the manner in which the road has been constructed.

Our wire—one of the best it has ever been my lot to use—was put up by the veteran constructor, J. P. Springer, whose services the company have fortunately retained. Supt. C. E. Gates, chief train despatcher, with headquarters at Burlington, ably runs the machine. His assistants are J. Ellsworth, C. P. Johnson and J. McKechnie, who hold forth at division headquarters. Creston, a city not yet incorporated, of which there is much to be said—but having already occupied too much space in your columns, I will "cut out" and save my "magnets" for another time. MAC.

To Correspondents.

WE are obliged to postpone several very interesting communications until next week, on account of the pressure upon our columns. Our friends are assured that their favors are appreciated, and received with pleasure, and all shall have a chance to be heard as rapidly as our limits will permit.

A SUBSCRIBER.—Your inquiry has been overlooked. The first practical telegraph was developed in this country, but the first lines actually operated were in England.

PERSONALS.

Mr. T. J. HIGGINS, for many years past train despatcher for the Cleveland, Columbus, Cin. & Indianapolis R. R., has been appointed Superintendent of Telegraph on the same railroad.

Mr. E. R. HOWE, formerly of the Macon, Ga., W. U. office, has taken a position in the New Orleans office of the same company.

Mr. H. C. COX has returned to Big Sandy, Tenn., and was warmly welcomed by his many friends.

Mr. A. H. ROY, formerly of Ohio, but later of Big Sandy, Tenn., has accepted the L. & N. R. office, at Brooks' Station, Ky.

Mr. JOHN R. GLOVER has been appointed agent and operator at Tennessee Ridge, M. C. & L. R. R.

Mr. J. R. CASSIDY, of the Washington, D. C., Franklin office, left on the 19th inst., to accept a position with the Western Union Company at New York.

Mr. S. C. BURNS, a striker, takes Mr. CASSIDY's place in the Washington, D. C., Franklin office.

Mr. W. E. BRINGES has been appointed agent and operator of the Union Pacific Railroad, at Miser Station, Wyoming.

Mr. JOSEPH CHRISTIE, formerly agent and operator of the U. P. R. R. at Miser Station, has accepted the agency for the same road at Como, Wyoming.

Mrs. S. T. BAYLIES, of the Western Union Fort Madison, Iowa, office, has been transferred to Alton, Illinois, office of the same company.

Mr. T. P. COOK, formerly operator and manager at Lawrence, Kansas, has been appointed Assistant Superintendent W. U. Co.; headquarters, Kansas City, Mo.

Couldn't Play it on Him.

A WELL grown youth, bearing a package in his hand, entered the telegraph office yesterday and demanded that his "plunder" be instantaneously despatched to Burlington. The lady in charge, in astonishment, asked if he wanted it sent by telegraph, when he promptly responded that he did. She suggested that he had better try the express office, when he answered, with the air of a man who has cut his eye-teeth, "Oh, yer tryin' to play off on me!" After some argument on the subject he was convinced that the "Western Union" was not doing a freight business, and went off scratching his head, in order to "rake up" some device for getting that package to Burlington. —*Daily Kansas State Record.*

THE TELEGRAPH.

(By Atlantic Cable.)

INABILITY OF THE GOVERNMENT TELEGRAPH TO DO THE BUSINESS.

LONDON, March 11th.—In the House of Commons, today, Sir Stafford Northcote inquired if it was true that the reports of Parliamentary proceedings for the country journals were often forwarded by express instead of by telegraph.

The Postmaster-General admitted that this was sometimes the case, and explained that the necessity of forwarding reports by express resulted from the competition of the news companies, which was the fruit of low tolls. He said four news reports were now transmitted where one had hitherto been sent, while the general news was more voluminous than ever, and declared that the only remedy was in a combination of the newspapers.

THE ATLANTIC CABLE TARIFF.

LONDON, March 10th.—The *London Times*, in its money article to-day, suggests that, for an experiment, the Atlantic Cable tolls should be reduced for one month to five shillings for ten words.

PROTEST OF CHAMBERS OF COMMERCE AGAINST GOVERNMENT TELEGRAPH MISMANAGEMENT.

LONDON, March 11th.—The Chambers of Commerce of Belfast and Glasgow have remonstrated against the American mail service and the Government mismanagement of the English telegraphic system.

ATLANTIC TOLLS AND PROFITS.

LONDON, March 14th.—The *London Times* publishes a letter arguing strongly against the suggestion to try the experiment of reducing the rates of telegraphing through the English and French Atlantic Cables to a crown for twenty words. It predicts that such a change would stop the issuing of five per cent. dividends hereafter, and be likely to affect the reserve of the cable companies.

THE PROPOSED TELEGRAPH CONGRESS.

LONDON, March 15th.—Austria offers to assist as an independent power at the International Congress suggested by President Grant for the protection of telegraph cables, but declines to preside over its deliberations.

International Telegraph Conference.

INFORMATION, official and unofficial, shows that the proposition of Secretary Fish for an International Conference to Regulate Ocean Telegraphs has been assented to by Sweden and Norway, Denmark, Austria, North Germany, Turkey and Greece. The other Governments have not responded.

Expensive Correspondence.

THE New York, Newfoundland and London Telegraph Company brought suit last Friday in the Court of Claims against the United States. The suit is a claim for pay for sending five despatches in "code or cypher," from Hon. W. H. Seward, Secretary of State, to the British and French Ministers from the United States, as follows:

Nov. 24, 1866, Seward to Bigelow	\$19,540 50
" 29, " " to Adams	1,400 00
" 30, " " to Bigelow	3,995 25
May, 15, 1867, " to Adams	2,975 00
" 23, " " to Adams	4,330 00

Total, in gold.....\$32,240 75

FOREIGN TELEGRAPHIC NOTES.

THE following telegram from Bombay was received by the Telegraph Construction and Maintenance Company in London, March 5:

HALPIN, GREAT EASTERN. ADEN, March 2d., 8:15, A.M., Greenwich time.—The Bombay and Aden section successfully completed. Intend to proceed with the Red Sea section to-morrow.

In the House of Commons, March 4, the Marquis of Hartington stated that before the transfer of the telegraphs to the Post-office the Stock Exchanges of London, Liverpool, Manchester, Leeds, Glasgow and other large towns were connected with the telegraph systems by special wires, and certain facilities were given to the members of such stock exchanges. The same advantages had been afforded by the Post-office, but he was not aware that the members of the Stock Exchanges had any other preference or priority over the public generally. With regard to the time which ought to be occupied between the reception of a telegraphic message between any of the chief district Post-offices of the metropolis and its de-

livery within one mile of the terminal office in any important town within 200 miles, it depended upon the state of the wires and other circumstances. If in direct communication by telegraph, a message ought to be delivered within twenty or thirty minutes. With the system in proper order two hours would certainly be too long; but if there were any complaints it was desirable that they should be reported to the department.

An imperial decree, dated the 28th of February, approves of the convention concluded jointly by the Ministers of the Interior and of War with the firm of M.M. Breitmayer for the laying of a telegraph cable between France and Egypt, touching the coast of Algeria. The concession stipulates that under no condition whatsoever shall the lines of the new cable, on its course from France to Algeria, cross the cable previously conceded to the firm of M.M. Erlanger & Co. The concession granted to the Breitmayer firm confers no exclusive privilege. The tariff for a message from France to Egypt by the new line is fixed at twenty-five francs for twenty words.

It is stated that the directors of the Northeastern Railway of England will establish a telegraph system of their own, with their own wires, and under the superintendence of an electrician, whom they will keep upon their staff.

Worthy of Patronage.

Mr. H. W. POPE, manager of the office of the Atlantic and Pacific Telegraph Company at the Produce Exchange, has, in connection with his telegraph business, opened a railroad ticket office. Those of our readers who are about to travel will be able to purchase tickets of him on as favorable terms as elsewhere. We trust that he may receive a liberal patronage, and that our friends will use their influence to aid in extending his business.

New Patents.

For the week ending March 15, 1870, and each bearing that date.

100,773.—APPARATUS FOR LIGHTING GAS BY ELECTRICITY. William H. Kelly, New York.

Claim.—1. The nut B, of non-conducting material, provided with a dovetailed slot to receive the part D, and the cylindrical chamber to receive the axle C, substantially as and for the uses and purposes herein shown and described.

2. The axle C provided with the wire F, substantially as and for the uses and purposes herein shown and described.

3. The part D fitting in the dovetailed slot in the nut B, and so arranged as that its apex is flush with the exterior circumference of B, and coming in contact with the band E, while the vertical surface of the rear of its base will, at certain points in the revolution of the nut B, come in contact with the wire F, substantially as and for the purposes herein shown and described.

4. The parts B C D in combination with each other, as shown at fig. 5, for the uses and purposes herein shown and described.

5. The parts B C D in combination with the band E and igniter, for the uses and purposes as herein shown and described.

6. The band G provided with an aperture to receive the angular top or cap of the axle C, whereby the same is retained in a stationary position when the nut B is moved.

100,792.—HOTEL AND BURGLAR ALARM. Charles S. Noe, Bergen Point, N. J.

Claim.—1. The combination of the electro-magnets B B₁, &c., the armature levers L L₁, &c., with the pins d, crank axles N N₁, &c., springs h, and shields or indicators f, all arranged substantially as herein shown and described.

2. The swinging bars O, having the jaws i, and connected with each other by the rods j, in combination with the crank axles N N₁, &c., all arranged as set forth.

Recent British Patents.

Provisional Protection for Six Months.

No. 272.—ROBERT DICK, Glasgow, Lanarkshire, N. B. New or improved modes and means of covering and insulating the wires of electric telegraphs.

No. 274.—THOMAS WALKER, Robert street, Chelsea, London.

Improvements applicable to telegraphic purposes.

Notices of Intention to Proceed with Patents.

No. 2,875.—SIR CHARLES TILSTON BRIGHT, Westminster Chambers, Victoria street, London.

Improvements in electric telegraphs.

Abstract of Specifications.

No. 1,920.—A. M. CLARK, Chancery Lane. Electric Telegraphs.

The inventor claims, first, obtaining a synchronous action of the manipulator and receiver, by causing the receiver to work faster than the manipulator, and stopping it at every turn, when it is again started electrically by a current from the receiver at the moment when the two apparatuses correspond, employing for the purpose the two independent systems of wheel-work arranged. Secondly, regulating the motion of the wheel-work of telegraphs generally by the circular vibrations of a diapason, or the rectilinear vibration of a cord or flat spring.

DIED.

BARNETT.—At Elizabeth, N. J., March 8th, JAMES M. BARNETT, of the Western Union Telegraph office, 145 Broadway, formerly of Pennsylvania.

DUNN.—At Baltimore, Feb. 26th, JESSE WEBSTER, infant daughter of W. A. DUNN, operator of the Bankers and Brokers' line.



SATURDAY, MARCH 19, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG...Box 248 P. O., Washington, D.C.

Vice-President. W. O. LEWIS....New York.

Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.

Recording Sec...W. W. BURHANS...Box 6010, P. O., New York.

Corres. Sec....F. L. POPE....Box 6010 P. O., N. Y.

THE DUTY OF TELEGRAPH EMPLOYÉS.

AS a natural consequence of the events of the last three months, there is a good deal of bad feeling and dissatisfaction on the part of Western Union employés towards their employers. Although defeated in their effort at independence, and, for the time, obliged to submit to the conditions imposed by the Western Union Company, they feel that in many instances these conditions were made unnecessarily onerous and humiliating. The unmanly and unchristian persecution of the female operators who participated in the demonstration has greatly intensified and aggravated the bad feeling alluded to. As if all this were not enough to thoroughly demoralize the service, a persecution of the organ of the profession, for its faithfulness in the support of the rights of its constituents, has been inaugurated, with the avowed determination to suppress and destroy it. This last outrageous interference with the independence of employés, by certain officials of the Western Union Company, is felt to be but the precursor of a system of oppression, which can only be successfully inaugurated when the employés are without the means to make public the wrongs and insults to which they are subjected. We have received abundant evidence of the real sentiments and feelings of Western Union operators at this futile attempt at proscription. In this they recognize the real purpose and determination of those who seek to make them mere dependents upon the uncontrolled tyranny of those placed over them.

When the demonstration of the Western Union operators was recognized as a failure, the managers of that company had an opportunity such as is seldom afforded to remove the dissatisfaction and ill feeling which had long existed among the employés. If a system of management similar to that so successfully established by the late American Telegraph Company had been inaugurated, and a disposition shown to deal justly with even the most humble and unimportant employé, there would have been no necessity for or danger of another organization like that of the Telegraphers' Protective League. Any injustice would have found legitimate methods of correction, and any official disposed to tyrannize over those employed in subordinate positions could have been speedily taught what his real and proper duties were. If any cause of dissatisfaction arose it could have been investigated, and, if discovered to have been well founded, could have been promptly removed.

Had this course been taken, the temporary damage resulting from the strike would have been more than compensated by the removal of the many just causes of dissatisfaction and complaint which have grown up under the semi-military system of management which has been inaugurated by the quasi parlor Generals who occupy

controlling positions on at least two thirds of the lines of the company.

There did not, however, seem to be the needed wisdom to recognize and act as was so eminently desirable for the best interests of all parties. Humiliating conditions were imposed upon those whose necessities compelled them to submit to the terms offered. The management of the company was found to be more unjust and tyrannical than ever. So complete was believed to be the subjugation of the employés that it is attempted to dictate to them, as a condition of their remaining in the service of that company, *what papers they shall subscribe for and read*. When a despotism has become so complete as to undertake the regulation of the press, it is generally considered to have gone about as far as is practicable. This is now attempted on the Western Union lines.

We have thus briefly sketched the present condition of the Western Union employés (and we think it will be generally conceded that the picture is under rather than overdrawn) with the view of considering what the duties of the employés towards the company are under the circumstances. We have no desire or intention of intensifying the feelings which such treatment must unavoidably create. We have no desire that dissatisfaction and inefficient service should be the rule upon the lines of the great telegraph company of the country and of the world. On the contrary, we should prefer to see harmony and good will between employers and employés upon that line, and, were it possible, would willingly contribute to the extent of our influence to secure them.

While it is the duty of the employés of that company to resist and defeat, by every feasible means, these attempts to tyrannize over them, they should be careful to afford no just cause of complaint. It cannot be expected that they should feel that interest in the prosperity of the company which, under other circumstances, it would be their duty to do. Made to feel, as they constantly are, that they are but unimportant individuals in the great system of which they are a part, they cannot be expected to labor as though the success of the company depended upon the faithfulness with which they discharge their duties. They should, however, endeavor to discharge conscientiously the duties which they are paid to perform. Two wrongs never yet made a right, and it is not proper that, because they are unjustifiably and tyrannically treated, they should seek to avoid rendering an equivalent for the compensation received. Let them keep their skirts clean, and give no just cause for complaint, and the time may yet come when their wrongs shall be righted, and they can feel that it is no humiliation to be an employé, even of the Western Union Company. Patience under wrong, until it can be righted, is often a virtue. Let them do nothing rashly, but perform their allotted tasks faithfully, and trust to the future to provide a remedy for present wrongs.

Thanks.

WE are under obligation to the numerous friends of THE TELEGRAPHER, who have expressed their sympathy with us in the persecution of the paper, undertaken by certain high officials of the Western Union Telegraph Company. Especially are we under obligation to the employés of that company for their expressions of approval of the course of the paper, and their determination to stand by and support it to the extent of their ability.

The attempt of Messrs. ECKERT and STAGER, and certain other Western Union officials, to destroy the only organ and representative of the practical telegraphers of the country, has aroused a feeling of indignation which insures the defeat of their nefarious plans. Do and say whatever these parties may, THE TELEGRAPHER is a fixed fact and a permanency. The telegraphers of this country are not yet so lost to every sentiment of manly independence as to submit to the attempted outrageous dictation of these small souled officials.

We shall redouble our efforts to make the paper worthy of support. An independent telegraph journal is a necessity, and must and shall be maintained. Every interest of telegraph employés requires that they should have an organ to maintain their rights and expose their wrongs. This THE TELEGRAPHER has always faithfully done, and what it has been in the past is a guarantee of what it will be in the future.

Under present circumstances it is the duty, as it will, no doubt, be the pleasure of every telegrapher who has his own interests and the interests of the profession at heart, to coöperate, to the extent of his ability, in sustaining this paper.

Agency of the Brooks Insulator.

It affords us much pleasure to call the attention of our readers to the advertisement in this paper announcing the appointment of L. G. TILLOTSON & Co. as general agents for the United States for Mr. D. BROOKS' excellent improved paraffine insulator. The energy and enterprise of this firm will doubtless prove of great advantage in increasing and extending the sale and use of Mr. BROOKS' valuable invention. Our readers have been so fully informed of the superiority of this insulator that we need not restate its merits and advantages. We congratulate both Mr. BROOKS and TILLOTSON & Co. on this combination of interests.

A supply of these insulators may always be found at No. 11 Dey street, in this city, and at the store of BLISS, TILLOTSON & Co., in Chicago.

Valuable Scientific Contributions.

WE are indebted to the courtesy of Prof. G. W. HOUGH, Director of the Dudley Observatory, Albany, N. Y., for his two pamphlets—one entitled "Remarks on the Galvanic Battery," and the other, which we reprint on our first page this week, on the "Velocity of the Electric Current." These were received some time since, but we inadvertently omitted to notice them at the time. The researches of Prof. HOUGH are extremely valuable and interesting, and worthy of careful study by the scientific telegrapher.

Where The Telegrapher can be Purchased.

AT the suggestion of a number of friends, we have made arrangements with the proprietor of the news stand on the corner of Dey street and Broadway to keep THE TELEGRAPHER for sale regularly. Hereafter, persons desiring to purchase single copies of the paper can obtain them without the trouble of visiting the office.

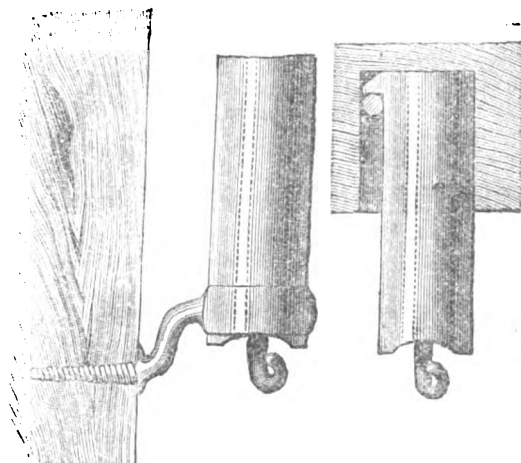
An Atlantic Cable to Rhode Island.

A LONDON despatch has lately announced that a contract has been signed for a new Atlantic telegraph between Wales and Rhode Island. The cost of the cable, as stipulated in the contract, is to be £600,000, or \$3,000,000 in gold. This is considerably lower in rate than any cable which has thus far been constructed. The cost of the cable between Belgium and America is stated by the New York Tribune to be fixed by contract at £684,000, the length being 3,600 miles of deep sea. The shore ends are to be 160 miles in length, and are to cost the additional sum of £85,200; and the whole is to be laid, amounting in all to 3,760 miles, at a cost of £100,000. The cable between this country and France which has been laid is somewhat shorter, being 3,200 miles in length. The cost of construction and laying, all told, was \$5,100,000, with additional expenditures, making the whole outlay for the enterprise \$6,265,000. If the Rhode Island cable is to cost, shore ends included, not more than \$3,000,000 for construction, the amount required for laying it will not, at the very outside, exceed that named in the contract for the Belgic cable, which is \$684,000. The whole enterprise, therefore, will not require an outlay to exceed \$3,500,000, which shows a saving of several millions over every other Atlantic cable that has thus far been laid. The length of the new cable is less, and it is to have the great advantage of landing directly on American shores, without halting by the way, at a place under foreign jurisdiction, as the cables all do. This will be a very important consideration in case of war, and may, at other times, secure for it the preference for American business.—Providence Journal.

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FOR THE SPRING OF 1870,
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It has been the custom of the present publisher and editor of
"THE TELEGRAPHER"

to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to

INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES and INJUSTICE practised by them upon its employees, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

The President of that Company, however, distinctly disavows this action, and says, in a communication to the editor of THE TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S) discontinuance and discountenance a test of competency for our service."

It will be seen, therefore, that this movement is one incited on the part of certain of the subordinate officials of that Company by personal spite and chagrin, because the paper has remained UNSWERVINGLY FAITHFUL to the interests of the Practical Telegraphers of the country, and could not be used for the personal ends of those disgruntled officials.

It remains to be seen whether the Practical Telegraphers of this country CAN BE RELIED UPON to stand by those who seek to secure to them JUSTICE AND FAIR TREATMENT.

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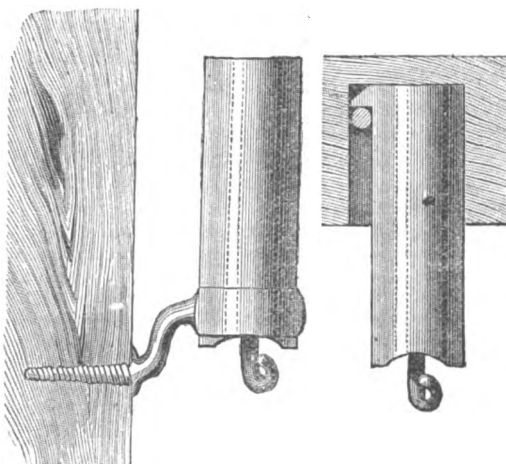
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A Journal of Electrical Progress.

PUBLISHED EVERY SATURDAY

BY THE

NATIONAL TELEGRAPHIC UNION,

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SIXTH VOLUME.

The SIXTH VOLUME of THE TELEGRAPHER will commence with the issue for SATURDAY, AUGUST 28th, 1869.

The Fifth Volume has proved more successful pecuniarily than any which has preceded it—the confidence of the fraternity in their ORGAN, and in its intelligent devotion to the advancement of their interests, increasing from year to year, and securing for it a more general and united support from the practical Telegraphers of the country.

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THE TELEGRAPHIC JOURNAL OF ELECTRICAL PROGRESS.

Vol. VI.—No. 31.

New York, Saturday, March 26, 1870.

Whole No. 193.

VELOCITY OF THE ELECTRIC CURRENT.

BY PROFESSOR G. W. HOUGH.

(Concluded.)

CIRCUITS.

The circuits were made up by Mr. C. S. Jones, manager of the Albany office, by looping together wires leading to Buffalo, N. Y., Boston, etc., until a sufficient length of circuit was secured. The connections at those points were made by the managers or operators in charge. I cannot but express my thanks to them for the courtesies and facilities afforded us in these experiments.

When all the arrangements were completed for the experiments, the operator at the Observatory requested a certain length of circuit with a given number of battery elements. As soon as the necessary connections were made Mr. Jones stated the length of circuit, together with the number and position of the battery elements. The clock was then thrown in circuit, and the line was opened and closed at one end, and each one of the three relays were used to record the beats on the chronograph. The same thing was also done by opening and closing at the other end.

Each complete experiment gave the following results:

- 1st. Armature time of relays.
- 2d. Armature time, plus time of transmission.
- 3d. Armature time, plus time of transmission in the opposite direction.

For the second experiment additional length of circuit was secured, and the same class of results deduced.

In this manner the longest circuit was used which the batteries and instruments were capable of operating.

The circuits were continuous, without any repeater or relays except those used at the Albany office and the Observatory.

As the repeater time varies from 0.03 to more than 0.10, any results for velocity through them would be greatly impaired if not entirely vitiated.

The longest circuit employed was 2,400 miles. Intelligible signals and clock beats could be sent over it, but owing to trouble on the wire were unable to use the results for velocity determinations.

Each separate result was the means of at least twenty-five measures from the chronograph sheets.

The following table exhibits the final results:

April 8th.

REMARKS.

Observed velocity, miles per second.	No. of Battery elements.	Length of Circuit in miles.	REMARKS.
12,200	130	1,000	{ Not comparable, owing to the change of adjustment between the experi- ments.
14,400	163	1,000	
			May 20th.
6,700	205	1,300	{ Not comparable. Trouble on the line. Tension of spring adjusted very tight.
9,300	250	1,300	
12,400	295	1,300	May 27th. Adjustment of relays not changed.
10,200	70	400	
20,000	160	400	
29,450	295	400	
18,200	295	1,000	

An inspection of these results shows at a glance that the velocity increases with the number of battery elements employed; also, for the same battery, it decreases with the length of the circuit. The question then generally arises, can the apparent velocity be expressed by a rigid mathematical formulæ?

The great difference between the velocities obtained on different nights, as also on the same night, leads us to inquire whether this is a real velocity of the electric im-

pulse, or only a mechanical phenomenon manifested in the electro-magnet.

If the celerity of the motion of the armature is proportional to the magnitude of the force acting on it, then our apparent velocities ought to be directly proportional to the magnetic force of the current. If this is found to be the case our results can only be regarded as mechanical effects, entirely distinct from the real velocity of the electric wave.

Ohm's celebrated law enables us to compute the magnetic forces for circuits of all kinds, and from these to deduce the relative ratios of the velocities.

The general formulæ is

$$f = \frac{n e}{n R + r} \quad f = \text{Magnetic force of the current.}$$

e = Electro-motive force.

n = Number of battery elements.

R = Resistance of one battery element.

r = All the other resistances in the circuit.

This formulæ will be somewhat modified by the escape, but as the amount was not measured the computation will be made without taking it into account.

If we make the resistance of the relays equal to 200 miles of line wire (which cannot be more than $\frac{1}{4}$ in error), and will not materially affect the computation, we will have the following equations, for the expression of the magnetic force, for the four experiments of May 27th:

$$f_1 = \frac{70 e}{70 R + 400 + 200} = \frac{70 e}{70 R + 600}$$

$$f_2 = \frac{160 e}{160 R + 400 + 200} = \frac{160 e}{160 R + 600}$$

$$f_3 = \frac{295 e}{295 R + 400 + 200} = \frac{295 e}{295 R + 600}$$

$$f_4 = \frac{295 e}{285 R + 1000 + 200} = \frac{295 e}{295 R + 1200}$$

The ratio of the velocities observed, making the first unity, is as follows:

$$\begin{aligned} V_1 &= 1 \\ V_2 &= 1.97 \\ V_3 &= 2.89 \\ V_4 &= 1.79 \end{aligned}$$

Substituting these values of $V_1, V_2, \&c.$, for $f_1, f_2, \&c.$, in the four equations, and determining e and R , we find,

$$e = 10.05$$

$$R = +1.43$$

Now, with the computed values of $f_1, f_2, \&c.$, we may compute the apparent velocities. The following is the result:

Observed Velocity.	Computed Velocity.	Diff. o-c.	Length of Circuit.	No. of Elements.
10,200	10,200	+ 000	400	70
20,000	19,700	+ 300	400	160
29,450	29,580	- 130	400	295
18,200	18,560	- 360	1000	295

From which it appears that the apparent velocity is directly proportional to the magnetic force of the circuit. Hence, we are led to conclude that in such experiments we do not determine the velocity of the electric impulse but only the mechanical force of the current.

There was no difference in the apparent velocity, whether the current passed from the positive to the negative pole or vice versa; neither was there any measurable difference whether the battery was all on one end or divided. It was, however, found to be impracticable to work a long circuit, say 1,000 miles, with the whole battery at one end of the line.

The computed value $R = 1.43$ miles of line wire, is apparently many times too great, but when we consider that no less than from fifteen to twenty wires are fed from the same battery, at the same time, it is not an impossible

value. It would, perhaps, be preferable in such cases to modify the general formulæ, by dividing the electro-motive force by the number of lines fed from the battery, which would give R more nearly its true value. But there are so many modifying causes at work in such experiments that refinement in mathematical computation is not possible or desirable.

In case we had a Galvanometer and Rheostat the values of e and R could be measured directly, and the magnetic force of the current at once ascertained. This is by far preferable, and we hope at some future time to continue the experiments with such apparatus.

Heating Railroad Cars by Electricity.

A STATEMENT has been going the rounds of the newspapers for some time that electricity has been applied successfully, as a heating medium, at the Hôtel Dieu hospital, in Paris, and it is said the other large hospitals in that city will be warmed by it instead of by coal.

The Washington Republican says: "Of course we know nothing of the apparatus by which this result is accomplished in Paris, but we had the opportunity of witnessing, on Wednesday last, at the Winder building, the experiments of Dr. Leigh Burton, in applying electricity for warming railroad cars, which were entirely successful and satisfactory. The invention consists of a chain, made up of alternate obstructions and free conductors, arranged compactly by being reflexed in grooves, and the apparatus covered by a metallic plate, and placed in front of each seat, in order that the feet of passengers may rest on them. When a current of electricity is sent through these heaters it is obstructed by the intervening non-conductors, of small diameter, and the evolution of heat is the result; and after the chain has become warmed the heat is radiated to the metallic plate.

"Associated with the apparatus is another, which is called a 'circuit changer,' and, by means of it a current of electricity, of a given power, may be sent through an almost unlimited number of circuits; and from the fact that the same current is sent through each circuit, at each revolution of the instrument, the same caloric effects are produced in each. It may explain this instrument more fully to compare it to a musical box, except that the points on it are arranged spirally, and instead of a musical sound a contact is effected. Now, by revolving this with great speed, an almost continual current is kept up in each circuit.

"The difficulties in the way of applying chemical electricity for heating purposes being thoroughly understood by the inventor, he proposes in this application of the invention to employ the magneto-electric machine, and the object of the experiments on Wednesday was to test the fitness of this machine for the purpose. The Army and Navy Departments having tendered Dr. Burton every facility for making these tests, the large magnet machine of the Smithsonian Institution was brought into requisition, and the small steam engine in the basement of the Winder building employed to drive it. The numerous persons present were amazed at the power of the current produced, for with it twenty feet of No. 29 iron were rendered red hot; and when it was applied to a single heater the platina connections were melted in a short time. Afterwards the current was applied to several heaters connected together, and in a short time the heat was equally developed in each, thereby proving conclusively the equal distribution of the current. Following this experiment the circuit changer was connected with several of the heaters, and it was found to do its work thoroughly.

"The advantage of employing this method of warming railroad cars must be obvious. By connecting the magnet machine with the axle of the car a motive power is obtained at scarcely any additional cost; and, regarding the entire feasibility of this proposition, the inventor is supported by the best scientific men in the country, as well

as by practical railroad men. In case of having a train thrown from the track, instead of being roasted alive with red hot stoves, the passengers, escaping the perils of being crushed by the wreck of the car, stand some chance of escaping a horrible death by burning. Upon the whole, the experiments were entirely satisfactory, and demonstrated clearly the entire feasibility of employing electricity as a heating agent."

[From *Harpers' New Monthly Magazine*.]

The Swift Messenger.

O ARIEL, tricky and dainty,
You spirit of finest air,
That was given the first man, Adam,
The breath of his mouth to bear;
Well suited the pair in Eden
Your happy wandering will;
But the world is wilder and sadder,
And you are a tridler still.

O Hermes, with winged sandals,
O teacher of tongues and arts,
That came to the craving nations
As the world grew in their hearts—
Unbarred the gates of learning
To stores for the people's need,
And teaching the cloistered bookmen
To write for the world to read.

Fly swiftly the wide earth over,
O Hermes, whose feet are wings!
Before you the darkness lightens,
Behind you the desert slugs.
But the world spins faster and faster,
And blessing must strive with ban,
And where shall we find a swifter
To carry the words of man?

On him, in the latter stages
(And his signals are all dumb),
The train of the thundering ages,
The ends of the world, are come.
Forth on the wild steam horses
He rides to the last affray;
But whom shall he send before him,
And who shall prepare his way?

His cry came up to the Watcher
That sits for the help of men,
And he said, "I must send another,
Or the world must halt again."
So he sought in the host of spirits
The spirit that swiftest ran,
And "Go," he said to the lightning,
"And carry the words of man!"

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

The Telegraph and Telegraphers at Washington.

WASHINGTON, D. C., March 23d.

TO THE EDITOR OF THE TELEGRAPHER.

As there has been absolutely nothing done in Congress since my last communication in reference to the telegraph, the present letter will be devoted to general telegraph matters. It is hardly probable that anything will be done in reference to the postal telegraph in either House for some time, if at all, during the present session; other telegraph matters remain in *statu quo* for the present. The consideration of the tariff bill, and other bills of pressing importance, preclude the possibility of any movement in the House in relation to telegraph affairs for some weeks, unless it is worked in on the previous question on "bill day" (Monday). The Senate will be engaged on the Georgia bill and on financial matters for some time. The Committees are doing nothing with any of the telegraph bills before them at present.

The only pressure recently brought to bear in favor of the postal telegraph schemes has been on the part of the printers. It is asserted by some of the craft here that the Printers' Unions will make a general movement upon Congress by the passage of resolutions favoring postal telegraph.

At a meeting of Typographical Union No. 101, of this city, held on Saturday evening last, a preamble and resolutions were adopted requesting Congress to establish the postal telegraph system, "so that the channel of telegraphic communication may be open to all, and that there may be no hindrance to the extension of a profession which has done so much to enlighten, civilize and improve the condition of the world."

The basis of this action of the printers is upon the alliance between the Western Union Company and the Associated Press, which they claim creates a monopoly and prevents the increase of newspapers. Fortunately, public opinion does not endorse their partial and incorrect opinion of the proper remedy for the difficulty of which they complain, and therefore telegraph interests, and the interests of the public in connection therewith, are for

the present safe from the paralyzing interference of the Government.

A new competing line to the South has been commenced under the superintendence of Mr. A. J. Baldwin, who is well known in connection with many previous telegraph schemes and enterprises. It is understood to be the intention to occupy two routes to the South, and thus cover all important points as rapidly as possible. Poles are being got out and in readiness to distribute between this city and Lynchburg, Virginia, as soon as the weather becomes settled.

Mr. W. P. Westervelt, Superintendent of the National Company, was in the city a few days ago, and has arranged to open an office at the Capitol, in the main entrance, by the hall of the House of Representatives, near the Western Union and Franklin Companies' offices. It is understood that the National Company do not propose to open their lines for business for some time yet, but will, in a few days, open between Washington and Baltimore, to test the Little automatic instruments. The object of this opening at the Capitol is to exhibit to the members of Congress and others the working of the automatic system. General Superintendent T. T. Eckert, Auditor W. H. Abel, and Superintendent Clinch, of the Western Union Company, were here last Friday. Much to the surprise of the operators in the Western Union office Eckert developed an unaccustomed affability, going through the office, shaking hands all round, and not ordering the discharge of anybody. The recent castigations of THE TELEGRAPHER are evidently having a beneficial effect upon this would-be telegraphic despot and dictator. The party left for Annapolis, Md., to settle up the affairs of the Western Union and Annapolis Telegraph Companies.

The exposé in THE TELEGRAPHER of the attempted forcible suppression of our organ took the operators in the employ of the Western Union Company here by surprise, as nothing had been said to them officially on the subject. Your editorials, although considered rather severe, are regarded as justified by the attempted outrage. The course of the paper, and its efforts to sustain the rights and interests of the profession, are fully appreciated, and endorsed by nearly every telegrapher in the city.

CAPITOL.

Gamble and Mumford Again Shown Up.

SAN FRANCISCO, March 7.

TO THE EDITOR OF THE TELEGRAPHER.

MR. GAMBLE'S letter, published in the *Journal of the Telegraph*, has caused some little talk among those who have been fortunate enough to have seen it. It is, without exception, the most audacious combination of lies ever published. As for the charges against my personal character, I pronounce each and every one false. They have all been highly colored, to suit the taste of the writer. Mr. Gamble knew they were false when he wrote them. But what does such a man, without honor or the least regard for the truth, care whether his statements are true or false, so long as they answer his purpose? I will not use your valuable columns in proving the falsity of those statements, as, considering whence they came, they are beneath my notice. His account of the cause of the "strike" contains about as much truth as the many contradictory reports heretofore circulated by the "officials" on this coast.

Let us look into the character of this man, Gamble. During the war it was a noticeable fact that every morning, as soon as the lines were opened for business, a certain cipher message was regularly transmitted from Salt Lake office to certain "officials" in San Francisco. This message contained gold quotations, and the regular business was held back for two or three hours, for what purpose the reader can easily imagine. From that time on this man, Gamble, was known to be in comfortable circumstances.

It is said, on Mr. Gamble's reelection to the superintendency of the California State Telegraph Co., at the time of the W. U. Co. assuming control of the above lines, two of the most influential men refused to serve as Directors as long as Gamble was to have any connection with the company—he having, during his connection with the United States Company, violated all principles of honor, and also exposed a few of the secrets of the California State Telegraph Company, in order to get a bill passed through the Nevada Legislature.

I will at some future time furnish some interesting items concerning the "officials" on this coast—showing how Mumford attempted to force some two hundred employes of the Russian Extension to leave this city without paying their little bills—but, through the intercession of a superior officer, this little game was foiled; and perhaps a LITTLE DOG story will show the true character of the "Cardiff Dwarf" (borrowed).

The showing the aggregate amounts paid out for salaries is a "smart dodge." Why did they not show

the number employed, etc., and why commence at October? This is just when the lines were consolidated and salaries reduced. Let them go back a little further and see how figures look. I have in my possession letters from several of the operators in Virginia city, showing clearly there were reductions in that quarter just after the consolidation.

Now for the card published by Mr. J. W. Brown, chief operator, who, since its publication, has personally admitted to me that "he did not write the same, but it was presented for his signature by Mumford"—knowing too well if he refused it might cost him his situation. Mumford doubtless wrote the other cards also, excepting Gamble's, which I believe emanated from his (G's) noble mind.

Mr. Field is a first class operator, as many can testify, and as an electrician has no equal on this coast, and it would do Mr. Gamble considerable good to take a few lessons from this same S. D. Field.

Despite "the officials," I am happy to say I only received three copies of the journal, and some five letters complaining of the "injustice done me," from persons on this coast. So the attempts of the "officials" to keep the paper from my view were futile.

L. N. JACOBS.

A Reply to "Justice," on Government Telegraphs.

WASHINGTON, D. C., March 15th.

TO THE EDITOR OF THE TELEGRAPHER.

As some of the friends of Government telegraphs may wonder if your lucid editorial reply, and the attack of "Justice," have entirely silenced me, I have thought proper to give one more "grunt" before expiring. When I wrote, asking "why it was not for our interest to have a Government telegraph?" I was heartily honest in my opinion and questions, and felt, with nine out of ten of the operators here, that it was our only hope. But since that time events here have made it very evident that this Congress will not pass any measure detrimental to the Western Union Company; and I therefore see no reason for defending a cause which will not, in all probability, be practically before us again until another Congress is elected, if at all.

I would like to say to "Justice" that his short memory, in failing to remember the passage of the resolution I quoted, is only accounted for by his former forgetfulness in the matter of a certain "pledge" and "oath," that only proves how treacherous his memory is to himself and comrades.

And, if he is afraid to let "my manager" know that it really did pass, perhaps "my manager" would give him a chance to make some "extra" if he will tell him that he voted to reconsider it, which was done on the ground of its being impertinent to the subject especially under consideration. "Justice's" reply is regarded here as a very personal and selfish one. He "got back." What does he care for the noble sufferers who lost their places entirely, merely because they were not so swift to go back, but waited to be absolved. His brother operators fail to admire his sentiments—as who would not?

And now, Mr. Editor, after thanking you for your reply, and the space I have used, allow me to assure you that your efforts in our behalf are fully appreciated by the Washington operators, and all we can do towards THE TELEGRAPHER's liberal support shall be done. If the worst comes we will do our share to keep it up by subscription—for THE TELEGRAPHER must live now at all events.

HYACINTHE.

Telegraphic Changes in Michigan.

DETROIT, MICH., March 9th.

TO THE EDITOR OF THE TELEGRAPHER.

WHERE are all the Detroit correspondents? Why don't they speak out? I have waited to hear from them so long that I am afraid they are to be numbered with the "slain" that the W. U. have "slow'd," or may be they are on the eve of being promoted to some "high rank," and are afraid of the official "halter." Let that be as it may, as some few changes have taken place in this office within the last few months, and as I think they will be of interest to quite a number of the fraternity, I take upon me the pleasure of making them known through your, I must say, most valuable columns.

On the first of January Mr. C. Fox was relieved of his duties as manager of this office, and made chief operator of Michigan, with headquarters in Detroit. Mr. C. Corbett, our late chief operator, was appointed manager, to fill the vacancy. The change was the most agreeable one to the operators that has occurred for years. Mr. Corbett was not much of a favorite among the operators, and now that he is manager, his duties call him down stairs. Mr. Fox has his chair in the operating room when in the city. He treats the operators as gentlemen; and those operators who were on the strike, and succeeded

in getting their situations back, are, I think, very much pleased with the kind and courteous manner in which Mr. Fox received them back. If all superintendents, managers and chief operators would act in like manner there would be no need of strikes. Four of the strikers were received back in this office.

On the first of February John C. Sullivan, familiarly known as "Yankee" in the South during the late war, was promoted to be chief operator. The notice was well received by the boys. "Yank" and the operators have always been on good terms, and, he being one of the old stock, we think we will not be "frowned" upon; and, if he keeps on as he has begun, it will be more pleasant up stairs through his administration than formerly.

The operators in this vicinity are inclined to favor the Government taking charge of and running the telegraph. I think if it was to be decided by the operators it would surely be carried. There seems to be some dispute with the Washington operators on the subject. One party claims the majority for postal telegraph, and the other says not. I don't think either side will affect it a great deal.

The W. U. Co. talk of extending their wires up into the northern part of the State, and building other lines on the two or three different railroads that are and are being completed in the central part of the State. The Atlantic and Pacific contemplate building wires to the north and northwest. They also expect to have another wire from Toledo to Detroit this spring, which they need very much. Business is good with them, and the prospects are it will be rushing as soon as navigation opens, which we are glad to note. There has been a good deal of changing around among the fraternity in this vicinity, caused by the recent strike. The most noticeable are: James F. Farrell, formerly manager of Bay City, to Terre Haute, Ind.; Frank C. Ackley, Saginaw City, to Jackson, Mich., as "owl;" Fred. Mann, Jackson, to Kalamazoo; John H. Byrne, East Saginaw, to "the first opening," and he seems to be perfectly satisfied with the prospect; Chas. P. Matthews, Detroit, to East Saginaw. They can all be recorded as "strikers," and, I believe, ones that "stood firm"—those that did not are not worth mentioning. Let the latter go wherever their consciences will admit them.

KOORAH.

Legislative Compliment to a Telegraph Manager.

TRENTON, N. J., March 19th.

TO THE EDITOR OF THE TELEGRAPHER.

A WELL-MERITED compliment was paid to our old friend and associate, Mr. John A. Wright, on the adjournment of the New Jersey Legislature. As this is the first instance of the kind, I send you the complimentary resolution, as it unanimously passed the Legislature:

"Resolved, That the thanks of this House be extended to the gentlemanly manager of the Pacific and Atlantic Telegraph Company, for the efficient manner in which he has performed the duties of his office, to the great convenience of the members and visitors to this Legislature."

The Western Union Company had an office in the Capitol, put up at the expense of the State during the session, but Mr. Wright took the whole of the business from them; so much so, that for the last two weeks of the session they abandoned the place, taking tables, instruments, and in fact everything belonging to the company, and left the field to Mr. Wright, so generally and justly popular, not only with the public but with the telegraphic profession.

Business here will be dull now that the Legislature has adjourned.

MILLS.

Not an Encouraging Prospect.

LODGE POLE DIVISION, U. P. R. T., March 14th.

TO THE EDITOR OF THE TELEGRAPHER.

I NOTICED in your last issue that our friend F— advises the young ladies of Madame Snow's vengeance to come on to the U. P. and procure satisfactory situations. We approve warmly of the idea, and second the motion with all our hearts, but would say one word to our lady friends. They would undoubtedly soon get sick of their bargain, and pine away for the want of appropriate society (which would be a very, very hard thing to procure in these parts). We have just lost our dearly beloved friend, Mrs. B—, and her absence is sadly lamented on our line. We hope that the coming ladies would not object to nurse a "fellar," should he get his "scalp" lifted by the "red devils."

LINES.

Address Wanted.

THE present address of a telegraph operator, named WALTER PIERSON, is desired. Any information to be communicated to A. V., care W. U. and Montreal Telegraph office, Buffalo, N. Y.

PERSONALS.

FRANK MORRISON, formerly of the New York Western Union office, has accepted a position at the Baltimore Depot, in Washington, D. C., for the Baltimore and Ohio R. R. Company.

MR. GEO. W. LEE, formerly of the Western Union Detroit office, has taken a situation with the Atlantic and Pacific and Great Western Telegraph Companies, at the Union Stock Yards, Illinois.

THE TELEGRAPH.

(By Atlantic Cable.)

IMPROVEMENT IN THE TELEGRAPH.

LONDON, March 22d.—In the House of Commons the Marquis of Hartington, the Postmaster-General, replied to a question relative to the delays in the telegraphic service. He explained that the delays were now chiefly confined to Ireland. Telegraphic tolls were cheap, consequently the wires were crowded. This was especially true in the north of Ireland. In the southern counties the lines had been cut maliciously. The submarine cable connecting Wexford with Haverford West, Wales, had also been cut ten miles away from the Irish coast. Under such circumstances delays were inevitable, but he hoped soon to be able to announce that delays occur only in exceptional cases.

FOREIGN TELEGRAPHIC NOTES.

THE intended issue of additional capital for the Shanghai extension of the China Submarine Telegraph Company is deferred, the directors having decided to take no steps in the matter until the construction of the line from Singapore to Hong Kong is further advanced.

The London Agency of the London and China telegraph announce that the Trans-Mongolian service for the transmission of telegraphic messages to China, via Kiachta, has been re-opened. The time of transit has been reduced to 10½ days.

In the concession granted by the French Government to the Submarine Telegraph Company, a clause was inserted that, when requested to do so, the company should lay a submarine cable from Havre to some point on the English coast. The traffic is now so great that the French Government have called upon the Submarine Company to lay this cable. The company are therefore going to lay a cable with six conductors during the summer.

The sixth annual report of the Telegraph Construction and Maintenance Company, of London, was highly satisfactory to the stockholders. In addition to ten per cent. dividends on the stock for the year £4 per share was returned to the stockholders. At the present time the company have contracts on hand for manufacturing cables to within a few miles of 8,000 miles, representing a cash value of £2,417,000.

A contract to put up telegraph lines through the State of Honduras has been awarded to John A. D. Bruno, of Belize.

Legalization of Consolidations of Telegraph Companies.

ON the 15th inst. Senator Creamer, of this city, introduced in the Senate of this State, now in session at Albany, an "Act in relation to telegraph companies," which was read twice and referred to the Committee on the Judiciary, and subsequently reported favorably from the Committee, and committed to the Committee of the Whole. It provides that, in order to perfect and extend the connections of telegraph companies in this State, and promote their union with the telegraph systems of other States, any telegraph company organized under the laws of this State may lease, sell or convey its property, rights, privileges and franchises, or any interest therein, or any part thereof, to any telegraph company organized under or created by the laws of this or any other State, and may acquire by lease, purchase or conveyance, the property, rights, privileges and franchises, or any interest therein, or any part thereof, of any telegraph company organized under or created by the laws of this or any other State, and may make payment therefor in its own stock, money or property, or receive payment therefor in the stock, money or property of the corporation to which the same may be so sold, leased or conveyed; provided, however, that no such purchase, sale, lease or conveyance, by any corporation of this State, shall be valid until it shall have been ratified and approved by a three fifths vote of its board of directors or trustees, and also by the consent thereto in writing, or by vote at a general meeting, duly called for the purpose, of three fifths in interest of the stockholders in such company, present or represented by proxy, at such meeting.

The Western Union.

THE meanest thing we have heard of in some time is the action of the Western Union Telegraph monopoly, in attempting to prevent the circulation of THE TELEGRAPHER among the operators in its employ.

We are not sorry, however, that such an attempt has been made, for while we know it will prove a miserable failure we are convinced that the paper wields an influence and is performing a good work.—The Workman.

Humors of the Telegraph.

THE Rondout Courier gets the following story from a telegraph operator in that village: "A member of the Masonic order telegraphed to a companion down the river somewhere, 'Make room for ten Royal Arch Masons. Coming to-day.' When the companions arrived they found a pen had been built for their accommodation, the telegraph at its destination reading, 'Make room for ten R. A. M's. Coming to-day.'"

More Work for the Great Eastern.

IT is stated that as soon as the "Great Eastern" returns from having laid the Red Sea cable she will immediately carry out another, to extend from Falmouth, by way of Gibraltar, to Malta, where it will join the present Malta and Alexandria cable, and will complete the direct line from England to Bombay. From the southernmost point of Ceylon a cable will then be carried to Singapore, touching at Penang and Malacca. From Singapore one line will proceed north to Hong Kong, Amoy and Shanghai, and another south to Batavia and through Java to Port Darwin, at the north of Australia. Thence a coast line will be taken round the eastern side of the Australian continent to Burketown, Cardwell, Rockhampton, Brisbane and Sydney, uniting with the Telegraph from Sydney to Melbourne and Adelaide, and with that from Melbourne to Launceston and Hobart Town. From Hobart Town a cable is projected to New Zealand; and, to complete the circle round the world, some American capitalists have been negotiating for another across the Pacific, from China to California, by way of Japan and Alaska. Of the enormous system which we have thus sketched in outline, it may be said that the whole will be constructed by British skill and energy, and the larger part by British capital. The cables will all be manufactured by the Telegraph Construction and Maintenance Company, and will be laid by the "Great Eastern" and her consorts. Excepting in the Island of Java and at the Isthmus of Suez the wires will be either submerged or upon British territory; and on the isthmus it is proposed that they shall be deeply buried.

Marvels of Telegraphy.

SOMEWHERE in the Spectator Addison quotes, from a monkish Latin writer of the Middle Ages, an account of a wonderful magnet, by means of which two lovers, far away from each other, might, under certain conditions and at certain hours of the day, hold sweet converse, in spite of the leagues that separated them. This dream of the mediæval monk has become a reality under the magic wand of modern science; or rather, the fiction has been more than made true. At all hours of the day and night, across broad continents, beneath thousands of miles of tempestuous ocean, messages are sent on the wings of lightning. All things that are done by men are made known throughout the circuit of the globe in less than the "forty minutes" in which Puck promised to put a girdle round it. The miracle has become so familiar to us that it ceases to excite our wonder or admiration, but what would old Ben. Franklin say if he could come back to earth and pay a visit to one of our telegraph offices?—Journal of Chemistry.

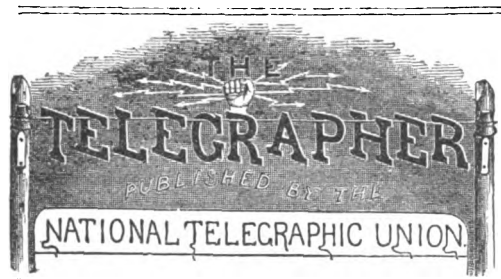
Don't Forget the Ladies.

WE would remind our friends that three of the young ladies who have been ostracized by Mother SNOW and other Western Union officials, on account of their participation in the recent demonstration, are still in want of situations. They will not be permitted to suffer, but it is desirable that situations should be found for them as speedily as possible. They are all good operators, and would give satisfaction in the discharge of the duties of any position they may accept. Their names and address can be obtained, by parties desiring their professional services, on application to the Editor of THE TELEGRAPHER.

Recent British Patents.

Patents on which the stamp duty of £100 has been paid.

WILLIAM HOOPER, Mitcham, Surrey.
Telegraphic wires and rods. 24th February, 1863.



SATURDAY, MARCH 26, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG...Box 248 P. O., Washington, D. C.

Vice-President..W. O. LEWIS....New York.

Treasurer.....A. L. WHIFFLE..Box 39 P. O., Albany, N. Y.

Recording Sec..W. W. BURHANS..Box 6010 P. O., New York.

Corres. Sec....F. L. POPE.....Box 6010 P. O., N. Y.

A FEW SUGGESTIONS TO TELEGRAPH MANAGERS.

ONE of the principal elements of strength to the Western Union Telegraph Company is found in the diverse purposes and demoralization of their competitors in the telegraph business. That company is a wealthy, compact and powerful organization. By successive and systematic consolidations, from a small beginning it has become a national corporation, its lines extending from the Atlantic to the Pacific Ocean; and, by means of exclusive connections, its influence and business has been connected with all the important telegraph systems of the world. In itself it is the most extensive and powerful telegraphic corporation in the world, and has proved immensely profitable to those who have had its control and management.

The people of this country are opposed to monopolies, especially in anything so intimately interwoven with all their business and social relations as the telegraph. The principal object of the men who control this immense corporation is, of course, to make money. Its history has demonstrated that when it had a practical monopoly it has been managed solely with that view, and the interests and convenience of the public were regarded as subordinate to its profit. Under these circumstances, almost as fast as it has succeeded in absorbing competing lines and companies, the means have been liberally furnished to establish new lines. In fact, so intense is the public opposition to this monopoly, and so earnest and determined the desire for competition with it, that, in spite of all the failures and rascality experienced in the past, the funds have always hitherto been readily forthcoming for new telegraphic enterprises.

It would naturally be supposed that, in view of the wealth and power of the Western Union Company, the opposition to it would be concentrated and combined, in order that the contest might be carried on with some show of success. Just the contrary has been the fact. Instead of one strong and powerful competing company, which might, with some prospect of success, seek to divide the telegraph business of the country, and, by a systematic extension of its lines, place itself in a position to transact the business entrusted to it, at least as advantageously and effectively as the Western Union, we have a number of poverty-stricken, inefficient and struggling organizations. Instead of combining their forces against the common enemy they are quarrelling amongst themselves, and seeking each other's destruction. While individually conceding that a combination is indispensable to success, they refuse to combine, except upon terms to which neither will consent. The managers of each company insist that the control of the consolidated companies shall be confided to their hands, or there shall be no consolidation.

The consequences of such a policy, or want of policy, are being rapidly developed, and some of the lines are now in danger of being sold out by the sheriff, at a small per centage upon their cost, to meet overdue demands, the payment of which cannot much longer be postponed. The entire competing telegraph system of the country is in imminent danger of ignominious failure, for want of a little practical common sense on the part of those who control the different companies.

We have often called attention to this matter, and urged upon the managers of these companies a combination and consolidation of their interests, and an extension of their lines upon a well devised plan, which shall place them in a position to respond to the requirements of the people. Capitalists have been humbugged so much by telegraph speculators that confidence is lost, and it has become very difficult for any company to procure the means to continue their enterprise. Were these struggling, quarrelling, and mutually homicidal corporations united, with an assurance to the public that the means confided to them would be honestly expended in an economical and judicious extension of the competing telegraph system, there would be no lack of funds with which to carry on the work. As it is, the managers of the great telegraph monopoly are delighted with the greed and lack of common sense on the part of their opponents, which is accomplishing their destruction and building up and increasing the power which it is designed to render irresistible in the future.

We speak earnestly on this subject, because not only the interests of the public but of the telegraphic profession in this country are vitally interested in it. If there were no competition for telegraph services the compensation of the operators and all telegraph employes would be materially reduced, and they would be obliged, as a condition of remaining in the business, to submit to any and all exactions that it might be thought desirable to impose upon them. Their status soon would be no better than that of European telegraphers, whose rank and pay is in many instances below that of common day laborers. For this reason, and on their behalf, we have consistently favored telegraphic competition, and shall continue to do so. We do not do this out of hostility to the Western Union Company, for we are not hostile to that Company, except in so far as its management forces us into a hostile position. It is for the interests of our constituents and of the public that that and all other telegraph companies should prosper. We believe that there is business enough in the country, if properly developed, and a cut-throat competition avoided, to remunerate two great companies. In order to pay reasonable dividends it might perhaps be necessary that the inflated capital of the Western Union should be reduced to an amount commensurate with the real value of its property and franchises, and the proposed consolidated company would need to be organized upon some other basis than stock issued at from 12½ to 50 per cent. upon its nominal value.

With such a consolidation the business would be much more economically and satisfactorily done, the stockholders and the public would be greatly benefited, and the employes of telegraph companies have an assurance of fair treatment, independence, and encouragement to remain in the business, instead of the best of them, as now, constantly seeking for an opening in some other direction, which shall relieve them from the necessity of sacrificing the best years of their lives in a profession which affords but little chance for advancement or inducement to engage in it as a permanency. What telegraph man and what company will take the lead in this much needed reform, and endeavor to save from failure and collapse the competing telegraph system of the country?

Liberality of the Western Union Official Organ.

It is but seldom that we have occasion to render our acknowledgments to the official organ of the Western Union Telegraph Company for either justice or courtesy,

and we therefore experience peculiar satisfaction in recognizing the favor to THE TELEGRAPHER in the last number of that interesting (?) semi-monthly, which, for want of paying subscriptions, is given away to its patrons (?) We refer, of course, to the publication in its last issue of the correspondence between the Editor of THE TELEGRAPHER and the President of the Western Union Company relative to the attempt of Messrs. ECKERT and STAGER to suppress THE TELEGRAPHER. Nothing could have been published in its columns that would have proved more beneficial to the organ of the telegraphic profession, or more gratifying, personally, to its Editor. We are already experiencing the benefit of the publication in the increase of new subscriptions to our paper, and would suggest to the amiable Editor of the official organ that if he desires to add to our obligation he keep the correspondence standing for a few weeks. The little attempt at sarcasm, in the brief introduction to the correspondence, greatly amused us, and we have the further gratification of having abundant evidence that, as a *revelator*, this paper is a success.

We would, however, submit, although with modest reluctance and apparent unreasonable intrusion upon good nature, that this correspondence as it stands is not exactly complete. The letter which the wrath of the late General Superintendents, ECKERT and STAGER, at his repudiation of their attempt at the forcible suppression of THE TELEGRAPHER, called forth from President ORTON, copies of which were forwarded by them to the District Superintendents, is wanting. Can it be true, as reported, that the President of the Western Union Telegraph Company says one thing to the Editor of THE TELEGRAPHER and the public, and, in his official communications to his subordinates, qualifiedly repudiates his public expressions?

Official Statement, Western Union Telegraph Co.

	Jan., 1870.	Jan., 1869.
Gross Receipts.....	\$543,938 89	\$606,051 90
Expenses.....	405,031 08	349,573 70
Net Profits.....	\$138,907 61	\$256,478 20

The above statement for the month of the strike has been looked for with much interest. It shows a reduction of over \$62,000 in the receipts, compared with the corresponding month of 1869; an increase of \$67,000 in expenses, and a decrease of net profits of over \$120,000. This is not a very encouraging exhibit for the stockholders, and probably does not include, by many thousands of dollars, the actual damage to the company from the playful experiments of its California agents on the endurance and forbearance of the operators on the Pacific coast.

The exhibition of a conciliatory disposition on the part of the managers of that company, even after the strike had been inaugurated, would have saved a large proportion of this loss to the company.

The Kansas Situations Filled.

We are requested by Mr. B. FRANK JOHNSON, of Philadelphia, who requested applications of operators for situations in Kansas, to state that his complement is filled, several applications having been received and favorably considered on the first appearance of the notice in THE TELEGRAPHER. This is intended as a reply to those who have received no response to their applications, and whose tenders of service could not, therefore, be availed of.

A New Labor Organ.

We have received the first number of a new weekly paper, entitled *The Workman*, which is devoted to the interest of working men and working women. It is the official organ of the National Labor Union, and is well filled with matter of interest to the working men and women of this country. The subscription price is two dollars per year, and there can be no doubt but that it will receive a liberal support from all who have the interests of the laboring classes at heart.

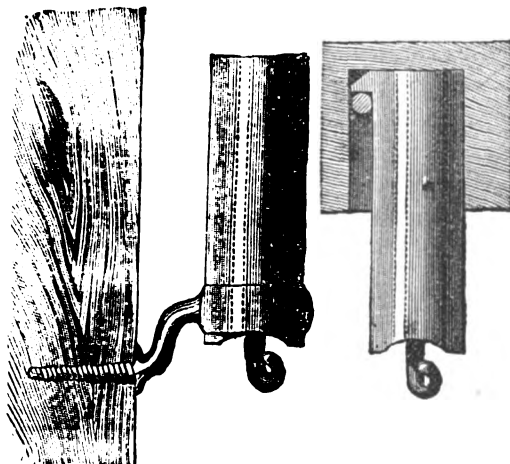
Our Premium Offer.

WE would again call the attention of the friends of THE TELEGRAPHER to the very liberal offer of premiums for subscriptions. We have reason to believe that this reminder of the necessity and duty of exertion, on behalf of the only organ of the telegraphic profession in the world, will meet with even a more satisfactory and general response than heretofore. We are daily receiving such evidences of a revival of practical interest in the paper as to greatly cheer and encourage us in our efforts on behalf of the telegraphers of the country.

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PREMIUMS! PREMIUMS!!

FOR THE SPRING OF 1870,
TO THE FRIENDS AND SUPPORTERS
OF
"THE TELEGRAPHER."

It has been the custom of the present publisher and editor of
"THE TELEGRAPHER"

to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to

INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES AND INJUSTICE practiced by them upon its employees, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

The President of that Company, however, distinctly disavows this action, and says, in a communication to the editor of THE TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S) 'discontinuance and discountenance' a test of competency for our service."

It will be seen, therefore, that this movement is one incited on the part of certain of the subordinate officials of that Company by personal spite and chagrin, because the paper has remained UNSWERVINGLY FAITHFUL to the interests of the Practical Telegraphers of the country, and could not be used for the personal ends of these disgruntled officials.

It remains to be seen whether the Practical Telegraphers of this country CAN BE RELIED UPON to stand by those who seek to secure to them JUSTICE AND FAIR TREATMENT.

In addition to the inducement offered above to exertions in support of the paper, we offer the following

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This offer will be good until May 31st, 1870.

For TWENTY-FIVE SUBSCRIBERS we will give to the person sending the names and money a

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For TWENTY SUBSCRIBERS a No. 1 TELEGRAPH KEY, either Caton or Self-Closing, as may be preferred, and a copy, either of "Modern Practice of the Electric Telegraph" or "Sabine's Electric Telegraph."

For FIFTEEN SUBSCRIBERS a No. 1 TELEGRAPH KEY, any pattern that may be desired.

For TEN SUBSCRIBERS, the Fourth Edition of "Cully's Handbook of Practical Telegraphy."

For SIX SUBSCRIBERS, "Noad's Inductorium" and "Sabine's Electric Telegraph."

For THREE SUBSCRIBERS, F. L. POPE'S "Modern Practice of the Electric Telegraph."

In addition to the above, we will give to the person who shall, on or before the 31st of May, send us THE LARGEST LIST OF SUBSCRIBERS, not less than FIFTY,

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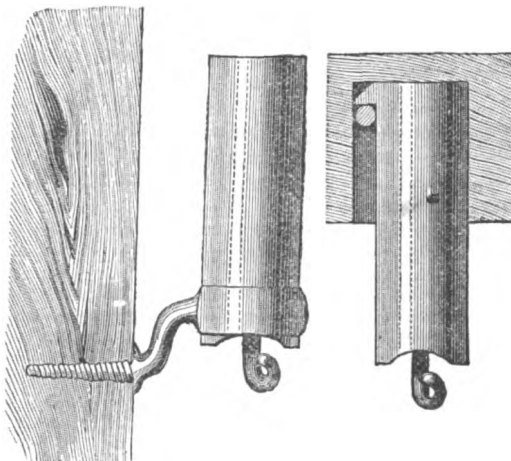
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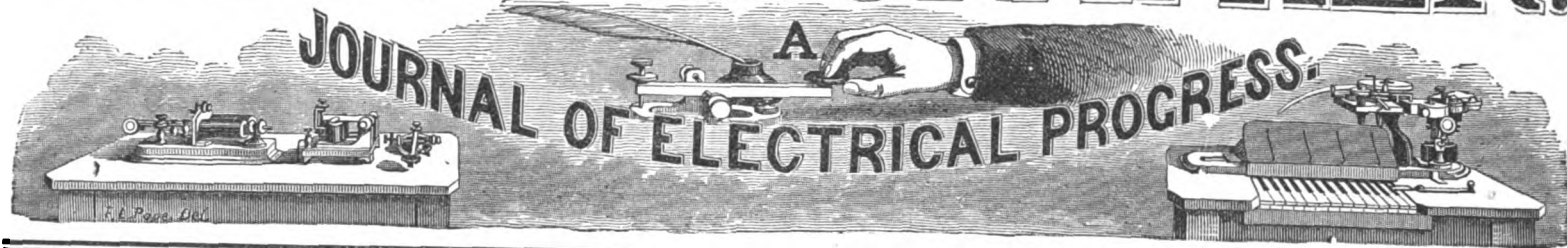
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THE TELEGRAPHER.



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Whole No. 194.

STORM AND FLOOD SIGNALS.

THE importance of an arrangement by which information of approaching storms may be transmitted and signalized in advance, has long attracted the attention not only of scientific men, but also of merchants, navigators, and farmers of intelligence.

Mr. A. Watson, in a recent communication to the Washington, D. C., *National Republican*, has proposed a plan which would seem to be very well elaborated, and which it is proposed to establish, with such modifications as may seem desirable, through united action of the government, the telegraph companies and the public.

Gen. A. J. Myers, chief signal officer of the Army Signal Corps, has been accumulating statistics, and has called upon the managers of all the telegraph companies for charts of their lines, and from them is preparing a chart of all the lines in the United States, for the purpose of testing the practicability and usefulness of the system proposed by Mr. Watson. Mr. Watson's plan is as follows:

"When a storm has formed, and commenced to travel in any certain direction, the first telegraph station or stations over which it passes is to send the news to all the telegraph stations at cities, county seats and principal towns, scores or a hundred miles in advance, according to the kind of storm or probable distance that it may travel, always keeping a suitable distance in advance.

"At each city, county seat and principal town a cannon is to be kept ready by the officials at the court house, or by a fire company, and as soon as the news is received of a coming storm it is to be fired three times, at intervals of one minute if a tornado, thunder or hail storm, terrific gale or destructive storm is approaching; at intervals of three minutes if an ordinary rain storm is approaching rapidly; at intervals of six minutes if an ordinary rain storm is approaching slowly; and at intervals of ten minutes if a destructive river flood is approaching. In case of very destructive storms or floods the signals may be repeated, after a suitable interval, to give additional warning. At large cities, when a destructive storm is approaching, fire and church bells may also be rung, and steam whistles be blown three times, at the same intervals as the guns, to increase the warning.

"As a good sized cannon can usually be heard from fifteen to twenty miles in every direction from the place of firing, or over a space of from thirty to forty miles square (1,600 square miles), by firing one at each county seat and principal town the farmers over the whole country, in harvest time, will be warned to stop cutting, and to get their grain or hay under cover, or in a situation to shut out the rain, thus saving not only that portion which had been cut and cured previous to the warning, but also saving that portion which otherwise would have been cut during several hours or a whole day without such warning.

"The storm signals will also be of great value to commerce on our extended coasts and in narrow channels, and particularly on our numerous bays, rivers and lakes, and especially in severe storms and hurricanes, by warning vessels to seek places of safety or prepare for the coming storm.

"The signals used for storms, when located at river towns, may also be used to give warning of destructive river floods. By firing a cannon at the principal town on a river a coming flood may be signalled throughout its entire length several hours in advance, by which many lives and large amounts of property will be saved. Even an hour's warning will often be of great value when the river rises suddenly, and runs with destructive rapidity and force.

"This plan has been approved of by the Western Union Telegraph Company, which owns a large majority of the lines throughout the Union; and, in order to test the system, will supply telegrams of approaching storms, whenever any very considerable number of cities and

towns shall make arrangements to fire signal guns, according to the plan proposed." The plan has also been approved of by many of the most prominent newspapers.

"Through a recent Act of Congress, to establish storm signals at military stations, this plan will be tested on rivers, lakes, bays and on the coast, for the benefit of commerce, and incidentally of agriculture. But, as these military stations are not numerous, and will be of inconsiderable utility to agriculture, except to test the system, it is therefore recommended that agricultural societies, and city and town authorities, take immediate measures to establish the signals at every city, county seat and principal town having telegraph facilities."

It is desirable that this plan should be generally circulated by the newspapers, in order that it may become generally known and discussed, and, if possible, established in time for the coming crop. Its importance to the mercantile marine of the country, and to all connected therewith, cannot be over-estimated. Timely warning of approaching storms will, no doubt, greatly reduce marine losses, and save many valuable lives, now annually sacrificed for the want of such warning.

Odd Plans for Car Heating.

SOME sanguine experimenters in Washington, D. C., have lately been wasting time with the view of heating railway cars by electricity, and the *Republican* of that city declares that "the advantage of employing this method of warming railway cars must be obvious." It is proposed to connect the axle of the car with an apparatus for generating frictional electricity; the current is to be sent through a conductor, interrupted at intervals by some material of minor conductivity, so that the retardation of the current will heat the conductor. This last is to be arranged at the feet of the passengers in each seat; and feet comfortably warmed, and a gently heated atmosphere in the car, are expected to suffice the traveller with as much of happiness as a poripatetic mortal is capable of feeling. The true philosophy of the apparatus may be stated in brief as follows: Coal is put in the locomotive furnace, its combustion makes steam in the boiler, and the steam passing to the engine drives the locomotive; the latter, drawing the car, gives motion to the car axle, a portion of the force of which is converted into electricity, and this, by retardation in the conductor, is transmitted into heat for warming the interior of the car. How much better than burning the coal in the car in the first place this plan may be can be readily imagined. The whole scheme is a pretty thing for a grown up man to be tinkering with in this latter half of the nineteenth century. The Army and Navy Departments are stated to have given the inventor every facility for making these tests, thereby following its own illustrious example in experimenting with the "shooting shot" mentioned on page 121, current volume of the *American Artisan*, and which was first suggested in the *London Punch* as affording a method of making a gun for shooting round the world.

If, however, folly, as is the case with misery, likes company, the originator of the above indicated brilliant electrical idea may take comfort in the assertion of the *London Globe* that the Empress of Russia has given a diamond ring to one M. Berchau for warming cars "without expense." This plan consists in attaching a number of disks to the axle, and bringing them in frictional contact with some suitable material, the heat generated thereby being expected to warm the car. The *Globe* asks, with a sad pathos over the shortcomings of British inventive talent, "How comes it that this simple idea has never occurred to any English engineer, or been thought worthy of working out?"—*American Artisan*.

Mr. Gardner G. Hubbard has been addressing a committee of the Massachusetts Legislature, urging legislative endorsement by that State of his postal telegraph scheme.

Improvements in Telegraph Lines.

THE Cologne (France) *Gazette* advocates the use of subterranean telegraph wires as preferable to those above ground, in this, that they are not liable to breakage from sudden changes in temperature, from the violence of winds, or from the encasing of ice upon them in frosty weather—and, further, not so liable to rust, which destroys common telegraph wires in from ten to twenty years—and not so susceptible to interference by damp, which frequently induces sufficient loss in the current to disturb communication. *Per contra*, subterranean lines must, like marine cables, be covered with an insulating material, and we believe in practice difficulties are experienced in working them not met with in ordinary lines. The objections to the latter, moreover, urged by the *Gazette*, will not hold in the main against the new American wire, now being extensively tried by telegraph companies in this country. This improved wire is of steel, with a copper coating drawn upon it in the process of manufacture. The steel gives strength, so that the wire may be made much smaller; the copper, by its superior conductivity, insures the requisite conducting power of the wire, notwithstanding the reduction in size, and the oxidation or injury of the copper is provided against by an external coating of tin.—*American Artisan*.

Another Preposterous Invention.

THE New York correspondent of the *Boston Journal* describes a new invention for displacing steam by electricity, and says that lathes, planing machines, and other mechanical arrangements are driven by this power. To run an engine of twenty-horse power by this invention would require only a space of three feet long two feet wide and two feet high. The cost per day would be thirty-five cents. On a steamship no coal would be required, and the space now used for coal and machinery could be used for cargo. The stubborn resistance of electricity to mechanical use heretofore has, it is believed, been overcome. A continuous battery has been secured, and other difficulties removed, principally through the coil of the magnet. If the invention works as well on the large scale as it does on the machinery to which it is now applied, steamships will soon ply the ocean under the new propelling power. A machine of great capacity is being constructed, and will soon be on exhibition in New York. The whole thing, mighty enough to carry a Cunarder to Liverpool, can be secured in a small trunk.

The West India and Panama Telegraph Company.

OWING to the French Government having removed all obstacles to the landing of telegraph cables on French territory, the West India and Panama Telegraph Company have altered their plans, so that instead of the Cuba, Jamaica and Aspinwall line being first laid down, it has been resolved to construct that from Cuba, touching at and along the archipelago of islands stretching from the former island to Guyana, and afterwards that to Aspinwall. The West India and Guyana Cable will leave London about the 10th of March, and be finished some time in May, and the Aspinwall and Jamaica line early in June. The whole of the work of the West India and Panama Telegraph Company (limited) will be accomplished about the 1st of July. The South Pacific and Panama Telegraph Company's Cable will be laid within fourteen months.—*Panama Herald*, March 3d.

Recently telegraphic communication between London, Liverpool and Manchester was interrupted upon their wires to each town. It was found that at a spot near Barnet the wires in question had been maliciously twisted together from pole to pole.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., March 30th.

TO THE EDITOR OF THE TELEGRAPHER.

CONGRESS has not touched upon telegraphic matters since my last week's communication was written, and there is no probability of any important action for some time yet. Mr. C. C. Washburn is getting information relative to the condition of the English telegraph lines under Government management, showing that at the expiration of six weeks things were in rather better shape than at first, which information is at once communicated to such newspaper correspondents as can be induced to relish it for the papers they represent. In this way it is sought to do away in part with the effect which the English fiasco had upon the previously weak condition of the postal telegraph cause.

Gen. Butler, as Chairman of the House Judiciary Committee, is engaged in investigating certain transactions of the lobby, and it is reported that he will shortly summon President Orton, of the Western Union Company, to testify before his committee as to whether he has used, or has been knowing to the use of money in connection with the postal telegraph schemes. Butler is also after the newspaper men generally, and it is reported that he intends to make another raid upon the telegraph offices here for despatches, to ascertain whether they are connected with certain lobby schemes. If this is attempted, however, the point will be raised at once that a Congressional Committee cannot invade the private rights of telegraph companies and investigate the private correspondence of their patrons. The absurdity of the assertion of such a right on the part of Congress or of its committees is so apparent, that if resisted it is doubtful if the attempt will be seriously persisted in. The pusillanimity of the managers of the telegraph companies, in tamely submitting to this outrage during the impeachment investigation, is not likely to be repeated now. Butler desires and intends to show up the lobby, and is, of course, unscrupulous as to the means used to accomplish that end, but he must not presume too far, at the present time, in his raids upon the telegraph offices and the telegraph interests of the country.

Mr. Cyrus W. Field has been here for several days, seeking an opportunity to appear before the Senate Committee on Foreign Relations, in connection with the proposed legislation relative to the French Cable Company. Mr. Sumner, the chairman of the committee, however, and the other members have been so much engaged with the St. Domingo treaty, that as yet no opportunity has been found to hear him. CAPITOL.

Details of Superintendent Gamble's Efforts to Provoke a Strike in California.

SACRAMENTO, February 28th.

TO THE EDITOR OF THE TELEGRAPHER.

I HAVE been somewhat surprised to see no communication from this point giving an account of the origin of the recent strike, and stating a few facts that might be of interest to the fraternity at large, since the opening scene occurred in this office, and the decision of the operators here, on the evening of December 31st, set the wheel in motion.

Mr. James Gamble, General Superintendent, reached Sacramento on the morning of the 31st from Marysville. While in the latter place he had relieved an operator who was connected with the League.

He spent the entire afternoon and evening of the 31st in the Sacramento office, closely watching the different instruments, to prevent the transmission of League business, and giving several orders over the wires, clearly indicating his designs with regard to the Leaguers. The manager of Stockton office, for instance, was ordered to send his assistant to Sacramento. The operator at Knights' Landing was ordered to report for duty at the same place. A division superintendent was instructed to be at Reno. Similar mysterious movements were on foot elsewhere, but as yet no word had passed between Mr. Gamble and his operators on the subject of a contemplated strike.

The situation in this office, just previous to the "firing of the first gun," was as follows:

The impression prevailed that considerable reduction had taken place in San Francisco office within the past few days—it had been so represented to us—and that two men had been unceremoniously discharged, on Mr. Gamble's being made cognizant of their connection with

the T. P. L. We had not been apprised of the fact that salaries in that office, in the aggregate, had been increased, nor that a petition had been presented to Mr. Mumford, not exactly protesting against a reduction, but requesting a slight increase.

Furthermore, a general reduction of 20 per cent. was daily looked for, several intimations having been given forth by certain persons, likely to speak from authority, that such a move was in contemplation, and one reduction of 20 per cent. having already been made here. Our fears were well grounded, as the December pay rolls proved, they showing two further reductions of 25 per cent. in this office.

We naturally interpreted this as the initiatory step towards the anticipated general reduction, and were in the mood to resist a measure so extreme and unjust as that of establishing a rate of compensation 20 per cent. below that established by the railway companies.

Such was the state of feeling in this office when Mr. Gamble called us together on the evening of December 31st, and a consultation of three hours took place. He plainly declared that if any one present was a member of the League, and had taken the oath, intending to stand by it, he might consider himself discharged; whereas, if we were willing to release ourselves from all obligations to any union or organization of operators, and continue to work, independent of whatever course of action the company might deem fit to take in San Francisco or elsewhere, he would restore the salaries of those who had been reduced in this office to their former figures.

We were required to give our decision before ten o'clock, and were allowed fifteen minutes to adjourn and consult among ourselves.

During our adjournment there was no unity of feeling whatever. All but two failed to see any grounds for striking, and precipitating the whole fraternity into a general conflict with the company.

The meeting was irregular and confused, and the votes were given with the greatest reluctance. Apparently we were acting against judgment and reason. In attempting to do an honorable act we did a very foolish thing. But having once launched our canoe out, and boldly faced the tempest, how much better would it have been for all our fellow operators—members and non-members of the League alike—to have supported us, at least to have withheld their aid in effecting our defeat.

Our interview with Mr. Gamble was accompanied by no unpleasant language on either side; and when he requested us to leave the office at ten o'clock, we did so as if it were the commonest occurrence in the world. It was farcical—nine men deciding to strike, and walking out of the office on the best of terms with the general superintendent!

The hard feeling and bitter strife that followed were caused wholly by the course pursued by Messrs. Gamble and Mumford, in attempting to shut off all telegraphic communication between ourselves and our friends East, and in circulating the report that we were on a strike for higher wages!

This story had its due effect, and was a fatal blow to the League. It saved to the company Corinne office, and caused the Clinton, Iowa, District to withdraw from the League entirely, while it seemed to shake the organization to its very foundation.

As regards Mr. Gamble's assertion that it was our purpose, in the event of success, to eventually demand higher salaries, I can say, from personal knowledge, that no such thing had ever been dreamed or spoken of among us. Moreover, he has repeatedly declared that he had knowledge of the existence of the League several months previous to the strike, although he was ignorant of its extent and numbers.

At the time of the consolidation with the A. & P. Telegraph Co. our force was augmented one man—five additional wires were brought into the office—hours were lengthened, and salaries reduced ten dollars. This might not be looked upon in the light of a reduction, as it seems some special arrangement had been made at a former time to work with a reduced force and extra pay, but it was certainly a strange way of returning to the old schedule. X.

A Vindication of the Western Union Telegraph Company.

WASHINGTON, D. C., March 28th.

TO THE EDITOR OF THE TELEGRAPHER.

AS SPRING begins to open "Hyacinths" begin to sprout, and the one I refer to seems to be rather weak. He has shown himself very ungenerous; there is nothing personal nor selfish in my previous communication. I could not see mistatements put forth of matters in which I was concerned without endeavoring to correct them. If he says I voted for any such resolution he states what is false. I can see no need for this war upon the Western

Union Company, the greater part of which, I presume, comes from others than employees of that company. Is it a crime for me to like my manager, who is always just and kind to me?

There is nothing unjust imposed upon me, nor any other employee in this office. We are all kindly treated.

Instead of this war why not all strive to promote peace and harmony? Why is it that the Western Union Company only is assailed? Why not assail the Franklin Company, who have recently reduced their operators' salaries here to the mere pittance of fifty dollars per month? The two operators that were employed by the Franklin Company here lately were strikers of the Western Union Company, but when their salaries were about to be reduced by the Franklin Company they were both taken back by the Western Union, and are now both employed. Is this slavery? I do not hesitate to state that THE TELEGRAPHER does not speak my sentiments, and I have no fear which prompts me to make this statement.

By the company giving me good employment I have been enabled to provide for my family, and to live comfortably and happily, and if I had known as much as I do now I would never have committed the grave error of deserting them on the fourth of January last, and I shall endeavor to amend that wrong by my future conduct.

Permit me also to state, in reply to "Capitol," as regards our being surprised by General Eckert shaking hands with us upon his recent visit here, that I should have been greatly surprised had he not done so. General Eckert never has visited this office without shaking hands with every employee he knew. I am well aware that I shall be assailed for this communication, but, being actuated by an honest motive, I am prepared for the assault. JUSTICE.

A Defence of the Postal Telegraph.

SOMERVILLE, TENN., Feb. 28.

TO THE EDITOR OF THE TELEGRAPHER.

It seems to me that you and "Capitol" are almost too heavy upon the postal telegraph system. It seems obvious to me that if the system is carried into effect it can but better the community at large—and, as for the operators, I cannot see how it will injure them in any degree. It is true that some operators will be thrown out of employment, but will it not be such operators as proved so treacherous to the telegraphic community in the late strike? As for the wages of operators, they would not be reduced, in my opinion; for does it not seem reasonable that the Government would pay good wages, so as to get good operators, and thereby secure the correct and speedy transmission of messages, and secure the faith of the public in the enterprise? And I am certain that the operators could not be treated worse than they are on the W. U. lines.

"Capitol," in his letter of the 17th, says "that it will be injurious to the profession, because a large number of important offices would be closed, and many good operators thus lose good situations." And again: "there being no competition, and the Government suffering a heavy loss in conducting it, as must necessarily be the case, the cheapest operators would be employed, except in the most important offices."

As regards his first statement, it is true that a good many important offices would be closed; but I contend that, with the closing of offices, a good many mean operators would be thrown out of employment, and the good ones employed in other offices equally as important. And here allow me to state that, notwithstanding the opinion of "Capitol" and yourself, Mr. Editor, as regards the opening of so many "non-paying" offices, I contend that, according to Mr. Washburn's bill, two thirds of the new offices opened would pay the cost of erection and other expenses in one year.

And, as to the second statement of "Capitol," I think he is taking too much for granted, without taking the trouble to examine into it and find out. I do not think the system, if passed, will necessarily be the loser thereby. On the contrary, I think that it will not only be able to pay expenses, but cover the deficit in the Post-office department, and thereby be able to employ the best operators, for with the present high tariff we support the A. & P. and the W. U. Co., besides other smaller companies; all of which Mr. Washburn, in his bill, proposes to do away with, and thereby throw all the business in the hands of the Government. The decrease in the tariff will greatly increase the number of messages sent and the receipts of the Government. But all of these facts and arguments I think "Island," in his communication, has clearly shown. I will not occupy your valuable space any longer with my communication, as I think "Island" has pretty well covered all the points in the case. ALPHA.

Vidette Vindicates the Truth of his Former Communication.

PITTSBURG, PA., March 24th.

TO THE EDITOR OF THE TELEGRAPHER.

IN reply to the communication signed "Pittsburg W. U. Operators," in THE TELEGRAPHER of last week, permit me to assure the writer thereof that his information and ability to read English understandingly are not of the best quality. I asserted that some salaries had been increased. I referred to those of Messrs. Hauff and Frew, now at Titusville.

As to doing Superintendent Rowe an injustice, such was not my intention, and an intelligent reading of the passage referring to him will convince any reasonable body that naught but commendation was attempted.

Again, my logical friend disclaims feeling any degradation in returning to work after the strike. I made no such assertion, but did say that three of the strikers "thought the terms too degrading," and sought employment elsewhere. This certainly had no reference to any other person.

In conclusion, allow me to say to my astute and learned friend that his desire to appear in print should not lead him to making such palpably erroneous corrections as he has endeavored, in answer to my communication. More than one half of the operators whom he claims to represent endorsed what I wrote, particularly that portion relating to the support due THE TELEGRAPHER. In that number none of the four whom we all so well remember are included. Adieu.

VIDETTE.

The Dubuque Telegraphers.

DUBUQUE, IOWA, March 22.

TO THE EDITOR OF THE TELEGRAPHER.

NOT knowing as you have been favored with a communication from "We'uns," and thinking one might, perhaps, be acceptable, I have concluded to inform you how we are getting along on the banks of the "Father of Waters." We, of the W. U. office, are in charge of the time-honored veteran, Robt. S. Fowler, familiarly known in telegraphic circles as "Bob." A more perfect gentleman cannot be found, as his host of friends will testify. Then comes Mr. E. P. Lyman, his able assistant, a gentleman in every sense of the word, and noted as one of the "best" (double entendre) of our honored fraternity in the country. And last but not least, every one west knows our *bonhomie* friend, Miss Mary Gray, who has been in the employ of the W. U. Company for some four or five years past, and in that time has won a host of friends. On account of ill health she contemplates a trip to her early home, "Bonnie Scotland." Friend Mary, we one and all wish thee "*bon voyage*," and may you return rejuvenated, to again take your place among us.

The P. and A. office is in charge of our urbane friend, Fred S. Benson, an "old timer," assisted by our well remembered "Bill" Kelsey, of "Russian extension notoriety," and Ed Smith, who has already the reputation of being one of the "fastest" in the West. Our friend "Bob" has charge of quite a number of lines running west of here, which no one knows better how to manage, as his success thus far testifies.

IOWA.

To Correspondents.

COLUMBUS.—Your paper has been regularly mailed.

PERSONALS.

Mr. CASSIMER BECHLER, formerly of the A. & P. office, Albany, N. Y., has succeeded Mr. H. F. PAYSON as manager of the Amsterdam, New York, office of the same company.

Mr. D. L. FINDLEY, formerly of Washington, D. C., has accepted a situation with the Western Union Company at Mobile, Alabama.

Mr. S. M. DUNLAP, formerly of Leesburg, Ohio, has accepted a position in the Western Union office at Louisville, Ky.

Mr. B. B. GLASS has been appointed manager of the office of the Great Western Telegraph Company at Davenport, Iowa.

Mr. W. B. VAN SIZE has accepted a position in the telegraph department of the New York Central R. R. at Oneida, N. Y.

Ocean Cable Profits.

THE London Times recently made the assertion that the average annual dividends from cable lines laid by British capital is twenty-five per cent. on their cost. During the past ten years the English wires have trailed in half the seas of the globe, and their agency in swelling British commercial facilities has been immense. It is time that American enterprise claimed its share of the work and profit of this mighty system of ocean telegraphy.—*American Artisan*.

THE TELEGRAPH.

(By Atlantic Cable.)

CABLE COMMUNICATION WITH BOMBAY.

LONDON, March 24.—The cable from Aden, Arabia, through the Red Sea to Suez, Egypt, has been successfully laid, thus completing a direct submarine line from Bombay to Suez.

LIVERPOOL, March 25.—The merchants here have signed a protest against messages for America being sent to London before being telegraphed by cable.

THE CUBA CABLE EXPEDITION.

LONDON, March 29.—The Cuba Cable fleet is now nearly ready to sail. It is the most perfectly appointed expedition of the kind ever despatched.

Progress of the National Line.

THE National Telegraph Company's line between this city and Philadelphia, which is being constructed under the superintendence of Mr. Robert Brown, has been completed to this side of New Brunswick, N. J. The Delaware river is crossed just north of the old bridge at Trenton, N. J., with a single stretch of 1,480 feet of the American compound wire, suspended from very heavy masts on either side, and hangs splendidly. It is fastened on each side to two of Brooks' insulators.

From the Darien Expedition.

A LETTER from the Darien exploring expedition, dated Caledonia Bay, March 13th, states that the telegraph corps have established a camp on "Nipsic Point," where they have opened a main office and put up instruments and batteries, and have cut out a road about three quarters of a mile long (in order to reach the surveyor's road), and built about half a mile of line. They would commence the following morning and extend their line up to the surveyor's camp, and thence onward to the Pacific as fast as the surveyors move, unless the plan of operations should be changed when the *Nipsic* returns from Carthage; which was, however, scarcely probable.

There had been no sickness among the officers or men of the expedition.

TELEGRAPHIC BREVITIES.

THE Great Western Telegraph Company has reached Omaha, Nebraska, with its poles, but is yet considerably behind in stringing the wire.

The Atlantic and Pacific Telegraph Company has just completed the extension of its wires to Cincinnati, Ohio, and has opened an office in that city.

"For Cowes and a market," the old marine phrase, is likely to be superseded in our coasting trade. It will be "For Key West and a market" hereafter, and the telegraph has brought about the change. Captains of vessels looking out for freights now send their inquiries from Key West, when touching at that port, and thus make engagements at a long distance, saving time and money and avoiding risks.

Numerous complaints having been made to the Street Department by persons in front of whose places of business and residence the fire telegraph poles have been erected in this city, Street Commissioner McLean announces that he denied the application of the Fire Commissioners for the privilege of erecting the poles, and that the Commissioners have assumed the right to set them under the act creating the Metropolitan Fire Department.

Matthew D. Field, brother of David Dudley and Cyrus W. Field, died at Southwick, Mass., on the 22d inst.

The mixture of sulphuric acid with water, which acts most powerfully upon the metal, zinc, was ascertained by De La Rive to be 33 parts of the concentrated acid to 100 of water.

FOREIGN TELEGRAPHIC NOTES.

LA LIBERTE publishes some statistics to prove the beneficial results that have followed a reduction in the tariff for telegraphic messages. On the 1st of November, 1869, the charge for an ordinary message between any two telegraph offices in France was reduced to one franc. In December, 1868, under the old and higher scale, the number of messages sent was 330,541. In December, 1869, with reduced tariff, the number was 495,135, or an increase of 49 per cent. The receipts in December, 1868, were 805,079 francs, and in December, 1869, 825,582 francs, or an increase of two per cent.

Valparaiso advices of the 16th of February say the Transandine Electric Company finished their work a few days since. This line crosses the Andes to Mendoza, thence to Villa Maria, where it will connect with the River Plate lines.

A company is being organized for the formation of a transandian telegraph line, which is to connect in a network with the various lines throughout the La Plata Republics, thus putting us in immediate connection with the United States and other parts of the North American continent. A Government subsidy is to be granted, and that justly, to this important undertaking.

A French imperial decree approves of the convention concluded jointly, by the Ministers of the Interior and of War, with the firm of M. Breitmayer for the laying of a cable between France and Egypt, touching the coast of Algeria. The convention stipulates that, under no condition whatsoever shall the lines of the new cable, on its course from France to Algeria, cross the cable previously conceded to M.M. Erlanger & Co. The concession confers no exclusive privileges.

The amount of cable required for the Mid-Ocean Telegraph Company has been completed, and when the weather has sufficiently moderated the paying out and stationing the ship in mid-channel will be proceeded with.

The *Mechanics' Magazine* (London) states that a suggestion has been made for the extension of the Post-office telegraph to the colonies. The cost is placed at £4,000,000 sterling; or, at 3½ per cent., £140,000 per annum. There is to be 24,000 miles of continuous cable, without landing upon the shore of any foreign country. The estimated net revenue is £500,000 a year, leaving £300,000 a year to be applied in laying duplicate cables throughout. We cannot imagine, it says, such a scheme assuming any form beyond that of a suggestion.

The *Mechanics' Magazine* says: "We are given to understand that special instructions have been sent to all our colonies, forbidding the landing of any submarine cable the property of a company promising any exclusive concessions." Shipping the Falmouth, Gibraltar and Malta cable has commenced at Greenwich, on board the "Scanderia," and the operation of paying out from Malta will commence about the end of April. The manufacture of the entire length of cable is nearly completed, there being now less than 300 miles to complete the entire length. The electrical tests of this cable show a high state of insulation.

A prospectus has been issued of the Franco-Egyptian Telegraph Company (limited), with a capital of £410,000, in shares of £10, to establish "a direct line between England, France, Algeria and Egypt—hereafter to be extended to India and China, as may be determined by the shareholders." It is to proceed through France to Marseilles, via the submarine line from Dover to Calais, and thence by cable to Algeria and Egypt, and is simply a competitive undertaking against the Falmouth, Gibraltar and Malta, and the Anglo-Mediterranean Companies.

New Patents.

For the week ending March 29, and bearing that date.

No. 101,372.—ELECTRO-MAGNETIC ANNUNCIATORS. William N. McInnis, Northumberland, Pa.

Claim.—1. The combination and arrangement of the magnet D, lever or armature E, pin a, and spring b, all substantially as and for the purposes herein set forth.

2. The falling door C, constructed as described, and operating substantially in the manner and for the purposes herein set forth.

3. The arrangement of the sliding frame K, with cross-bars L, springs M M, and lever N, substantially as and for the purposes herein set forth.

4. The arrangement of the magnet D, lever E, pin and spring a b, falling doors B, frame K, with bars L, springs M, lever N, magnet G, lever H, with hammer I, and spring d, for operating the bell J by electricity, all substantially as set forth.

DIED.

MURPHY.—At Westfield, Mass., March 24. JOHN W. MURPHY, Manager of the Western Union Telegraph office, aged 33 years, of consumption.

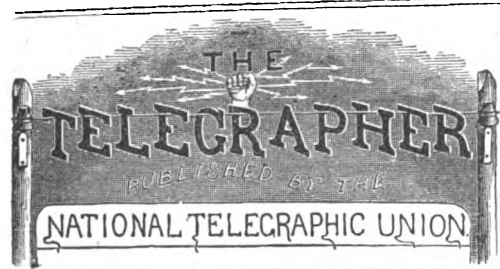
OBITUARY.

When our little sounder told us JOHN W. MURPHY was dead it sounded as though every dot jarred upon our heart chords.

Although comparatively young, he had from boyhood been engaged in telegraphy, and was generally known and respected, and by his kindness, cordiality and frankness, won the friendship of all with whom he came in contact. As a telegrapher, he regarded the fraternity as of one family—every operator he met was his friend, and it may be truthfully said that in his death the telegraph in this section loses one of its old landmarks. We had hoped that his life and usefulness would have been prolonged, but consumption, that dread scourge of our profession, has stricken him down at his post of duty, and we can only mourn our loss, cheered, however, with the hope that it may prove to him an eternal gain.

ALBANY, N. Y., March 30.

B.



SATURDAY, APRIL 2. 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D.C.

Vice-President..W. O. LEWIS....New York.

Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.

Recording Sec..W. W. BURNHAM...Box 6010, P. O., New York.

Corres. Sec....F. L. POPE.....Box 6010 P. O., N. Y.

SINGLE COPIES OF THE TELEGRAPHER MAY BE PURCHASED AT THE NEWS STAND AT THE CORNER OF BROADWAY AND DEY STREET.

JUSTICE TO THE WESTERN UNION TELEGRAPH COMPANY.

WE print on our correspondence page another communication from "JUSTICE," in reply to "HYACINTHE" and "CAPITOL." As we are not the organ of any corporation, we can afford to allow both sides an opportunity to be heard in our columns. In this connection we would repeat what we have often previously stated, that we regard it as the right of every respectable telegrapher to present and support his views through this paper, whether we concur in them or not. We never refuse to print properly written communications from telegraphers, however they may differ from us. Insulting letters, of course, are excluded from our columns, as they would be from any other well conducted paper.

There are one or two points in the communication referred to which we will briefly notice and reply to. "JUSTICE" says he can see no necessity for this war upon the Western Union Telegraph Company. Neither do we. There should be harmony and mutual good will between employers and employes always, as the best means of advancing their mutual interests. We believe that most of the employes of that company are desirous of establishing and maintaining amicable relations. For ourselves, we have never willingly or causelessly said anything to interrupt or prevent such harmonious relations. It is to be regretted that the management of the company and some of its superintendents have so persistently pursued a course which rendered harmony and good will impossible. We have given space to many communications from the employes of the Western Union Company, exposing impositions, and stating grievances which they were compelled to submit to. It is not reasonable to suppose that three quarters of the employes of any corporation (and for that company this is a reasonable estimate) should be in a state of chronic dissatisfaction and discontent unless there be some good cause therefor. What these causes were and are has been very fully set forth in our columns, and need not now be detailed. Editorially we have sought to do justice to the managers and management of that company. Whenever we have seen anything to commend we have not hesitated to state it approvingly. When we have had occasion to condemn we have as freely stated it. We have given place to communications stating grievances and making complaints which we have sometimes considered not as serious or well founded as the writers supposed, in pursuance of the principle which governs us in the conduct of the organ of the profession, of giving every telegrapher an opportunity to be heard. We regret that the rose colored statements of

"JUSTICE," in regard to the treatment of the Western Union employes in Washington, are not confirmed by his associates. In this we do not desire to be considered as reflecting personally upon the manager of that office. Probably he makes matters as pleasant as he can, consistently with the execution of the orders of his superiors. The great difficulty is in the system of management of the company.

"JUSTICE" seems to think that partiality is shown, because other companies are not oftener shown up for their oppression and ill treatment of operators. It is a sufficient reply to this that the columns of THE TELEGRAPHER are, and have been equally open to the employes of the Franklin and other companies as to those of the Western Union. We have never volunteered an attack upon either company. When our correspondents have brought to our notice acts of oppression or ill treatment, which we believed of sufficient importance to warrant it, we have editorially exposed or denounced them, without reference to the line or corporation concerned. When the Franklin line operators demanded that their pay should be made equal to that allowed by other companies for like services, we vigorously sustained them, and they were successful. When difficulty occurred between the Western Union Company and its operators we likewise sustained what we believed to be the just rights of the employes. We did this in no spirit of antagonism to the companies in either case, but because we considered that the operators were in the right. If the employes of any company make no complaint in regard to their treatment, we do not regard it as necessary or proper that we should do it for them, and it has never been our custom to do it.

When the managers of any company assail us, we shall defend ourselves and the paper to the best of our ability; and if in the course of the contest unpleasant truths are stated, that otherwise might not have seen the light, they have only themselves to blame for provoking it.

The management of the Western Union Company have assumed an antagonistic position towards THE TELEGRAPHER, and are openly and avowedly seeking and laboring for its destruction. The reason for this is patent. It is not especially that the paper has advocated competition in the telegraph business, or that it supported the employes in their recent difficulty—it is because they realize the fact that, while the practical telegraphers of the country have an organ through which they can be heard, their subjugation is impossible. Let this paper but cease to exist and salaries would at once be reduced, and regulations for the government of telegraph employes be established which would even convince "JUSTICE" that very little justice was to be expected at their hands.

We hope that "JUSTICE" may always be as well treated as at present, and be as well contented with his lot, and that his associates in the Washington office may never have any more cause for complaint than he represents them as having at present. We also hope that they may not (as we are informed they have not as yet) be subjected to the humiliation imposed upon their brethren in the New York and other important offices of the company, of being dictated to as to what papers they shall support and read.

Modern Practice of the Electric Telegraph.

THE third edition of Mr. POPE's valuable work, *Modern Practice of the Electric Telegraph*, has just been brought out by Mr. D. VAN NOSTRAND. We have so often expressed our opinion of the excellence and value of this work that any repetition thereof at the present time is needless. The mechanical execution and appearance of the work are creditable to the publisher.

No telegrapher, or person desiring to become a telegrapher, can afford to be without this work, and the rapid sale which it has had attests the acquiescence in this opinion of the telegraphic fraternity.

It may be ordered from the publisher, or will be forwarded by the editor of THE TELEGRAPHER, post paid, on receipt of the price, \$1.50. Mr. VAN NOSTRAND will make liberal arrangements with agents for introducing and selling the work upon telegraph lines.

More Light.

WE publish this week a communication from an esteemed correspondent at Sacramento, giving a more detailed statement than has heretofore appeared, of the course pursued by GAMBLE to provoke a strike on the part of the California operators. The impression which our earliest imperfect advices from our California friends created, that the outbreak was deliberately and intentionally provoked by MUMFORD and GAMBLE, to test the strength of and if possible destroy the League, has been confirmed by every additional item of information received from our friends in that quarter.

These men succeeded in their purpose, but at what a cost the decrease of profits in January last of \$120,000, and the decline of six or seven per cent. in the market value of the Western Union stock shows.

Decline of Telegraph Stock.

THE stock of the Western Union Telegraph Company has materially declined, under the slowing of the January statement of the business of the company, and the report that the next dividend is to be passed. It would be well if the managers of that corporation, especially General Superintendents ECKERT and STAGER, would devote their time and attention rather more to the increase of the business and receipts of their lines, and less to Quixotic attempts to suppress and destroy THE TELEGRAPHER, and the persecution of present and past employes of the company, who cannot be convinced that they are the embodiment of all electrical and telegraphic wisdom and business capacity. Attend to your legitimate business—abate somewhat of the self conceit which only renders you ridiculous in the eyes of all sensible telegraphers—let THE TELEGRAPHER alone, and the result cannot but be ADVANTAGEOUS to your masters, the stockholders of the company, and the public.

The Benefits of Persecution and Advertising.

THE attempt of certain high Western Union Officials to suppress THE TELEGRAPHER, and the publication of the letter of President ORTON, repudiating that action, appear equally efficacious and beneficial to the paper. For the benefit of our distinguished Western Union friends we publish the following extracts from letters received during the last week:

From an operator in Pennsylvania.

"Have been trying to find the address of THE TELEGRAPHER for some time past, and have at last found it in the *Journal of the Telegraph*. * * * * Forward one year's subscription."

From an Ohio telegrapher, with a list of new subscribers.

"The attempt of the W. U. Superintendents to crush out the paper will, I have no doubt, only serve to increase the number of your subscribers. I should not have interested myself to secure new ones had not this occurred."

From a prominent Western Union operator.

"To-day I have read the *Journal*, with your letter and Mr. ORTON's reply. I hope the Ventilator will ventilate, if in his power, and hope he may gain the power if he has it not now."

From the Manager of a large Western Union office.

"Although I don't get much chance to read the paper, still I don't propose to be debarred the privilege by legislative enactment. I enclose two dollars, etc."

We might go on and fill columns with similar extracts, but the above will suffice to show that Western Union employes are not all slaves, or disposed to submit to any outrageous subversion of their rights that such men as ECKERT and STAGER may see fit to order, even though they sign themselves General Superintendents.

The New Fire Alarm Telegraph.

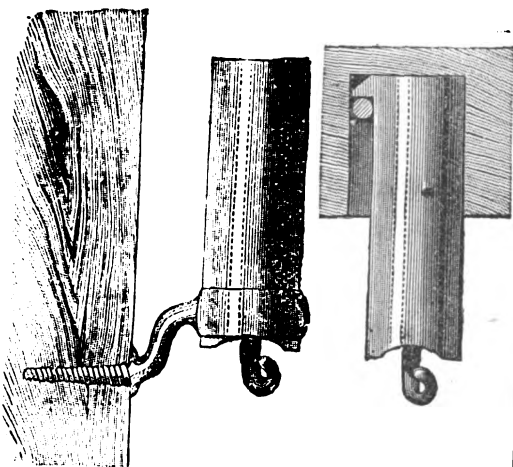
THE new Fire Alarm Telegraph of this city has been completed below Fourteenth st. by the enterprising contractors, Messrs. C. T. & J. N. Chester. We understand that it is working well and satisfactorily. As we have before stated, the system used is that of GAMEWELL & CO., which has been introduced generally in the important cities and towns of the United States, and always to the satisfaction of all parties interested.

We shall soon give a detailed account of this great work, which will prove of much interest, and place permanently on record the history of the enterprise.

BROOKS' PATENT PARAFFINE INSULATOR.

FOR SIDE OF POLE.

FOR CROSS-ARM.



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The improvements introduced in the construction of this Insulator make it, beyond question, the BEST.
Its insulating properties exceed those of the glass a hundred thousand fold.

In strength and durability it has no equal.
They are warranted not to break or part.
They are made with a screw shank, to fasten into the pole, price 35 cents each, or without the screw, for cross-arms, 30 cents each.

Pamphlets furnished, with full description.
A stock of the Insulators always on hand at our stores.
THE BROOKS INSULATOR, with the PATENT COMPOUND WIRE and our PATENT MAGNETS, constitute the best Telegraph Lines ever constructed.

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TUBES DRAWN FOR AIR PUMPS, CAMERAS AND TELESCOPES,

BRASS FINISHING AND MODEL MAKING,

209 Centre Street,

Between Howard and Grand Sts., New York.

FOR SALE.

A First Class MAIN LINE SOUNDER, manufactured by S. F. DAY, Ballston, N. Y., for sale cheap. Is as good as a new one. Apply to the EDITOR OF THE TELEGRAPHER.

PREMIUMS! PREMIUMS!!

FOR THE SPRING OF 1870,
TO THE FRIENDS AND SUPPORTERS
OF
"THE TELEGRAPHER."

It has been the custom of the present publisher and editor of "THE TELEGRAPHER" to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES AND INJUSTICE practised by them upon its employes, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

The President of that Company, however, distinctly disavows this action, and says, in a communication to the editor of THE TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S) 'discontinuance and discountenance' a test of competency for our service."

It will be seen, therefore, that this movement is one incited on the part of certain of the subordinate officials of that Company by personal spite and chagrin, because the paper has remained UNSWERVINGLY FAITHFUL to the interests of the Practical Telegraphers of the country, and could not be used for the personal ends of these disgruntled officials.

It remains to be seen whether the Practical Telegraphers of this country CAN BE RELIED UPON to stand by those who seek to secure to them JUSTICE AND FAIR TREATMENT.

In addition to the inducement offered above to exertions in support of the paper, we offer the following

LIBERAL PREMIUMS FOR NEW SUBSCRIPTIONS.

This offer will be good until May 31st, 1870.

For TWENTY-FIVE SUBSCRIBERS we will give to the person sending the names and money a

NO. 1 BOX RELAY (WARRANTED).

For TWENTY SUBSCRIBERS a No. 1 TELEGRAPH KEY, either Caton or Self-Closing, as may be preferred, and a copy, either of "Modern Practice of the Electric Telegraph" or "Sabine's Electric Telegraph."

For FIFTEEN SUBSCRIBERS a No. 1 TELEGRAPH KEY, any pattern that may be desired.

For TEN SUBSCRIBERS, the Fourth Edition of "Cully's Handbook of Practical Telegraphy."

For SIX SUBSCRIBERS, "Noad's Inductorium" and "Sabine's Electric Telegraph."

For THREE SUBSCRIBERS, F. L. POPE'S "Modern Practice of the Electric Telegraph."

In addition to the above, we will give to the person who shall, on or before the 31st of May, send us THE LARGEST LIST OF SUBSCRIBERS, not less than FIFTY,

A TWENTY DOLLAR GOLD COIN!

For the second largest list, not less than THIRTY-FIVE,

A TEN DOLLAR GOLD COIN!

Subscriptions must be for one year, or equivalent to that, and at the regular subscription price of the paper,

TWO DOLLARS PER YEAR.

Subscriptions for less than a year will be counted as fractional parts of one subscription.

Any of the Premiums offered may, at the option of the receiver, be changed for other articles of equal value.

Remittances may be made by Post-office order or registered letter, at the risk of the paper. From remittances of not less than Five Dollars the expense of the money order or of registering the letter may be deducted.

POPE'S MODERN PRACTICE

OF THE

ELECTRIC TELEGRAPH

A HAND-BOOK for ELECTRICIANS & OPERATORS.

THIRD EDITION NOW READY.

8vo, cloth.....\$1.50.

Agents are requested to send in their orders.

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OF EVERY DESCRIPTION.

Glass Insulators, Brackets, &c.

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Hill's Patent Galvanic Battery.

Ogden's Improved Carbons, with the Immersed Platina Connection.

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POPE'S MODERN PRACTICE

OF

THE ELECTRIC TELEGRAPH,

Publishers of Prof. J. E. SMITH'S

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CONTRACTORS, etc.,
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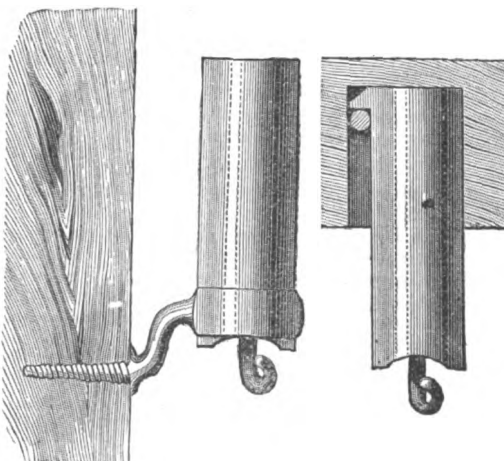
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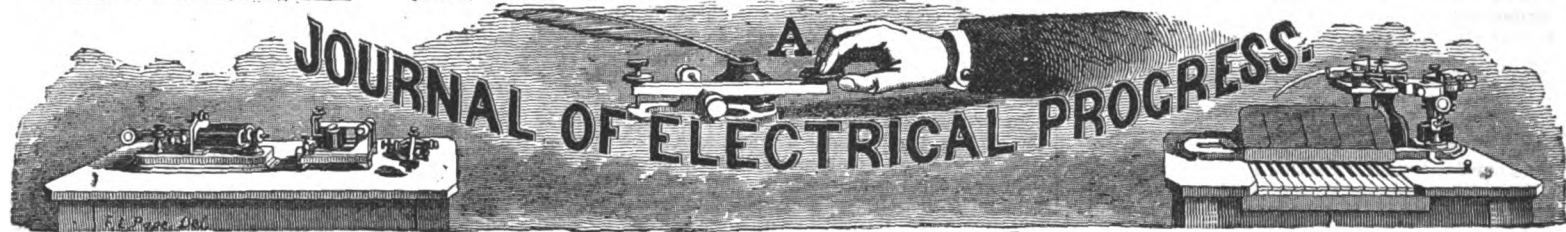
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THE TELEGRAPHER.



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New York, Saturday, April 9, 1870.

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[Written for *The Telegrapher*.]

THE PRINTING TELEGRAPH.

ITS HISTORY AND APPLICATIONS.

I.

THE type printing telegraph, in its complete and perfected form, is one of the most marvellous products of human ingenuity, not only on account of the rapidity and accuracy with which its work is performed, but of the beauty and simplicity of the principles upon which its operation depends. The renewed interest which has recently been manifested in this class of telegraphs will render a brief sketch of some of the different inventions of this kind acceptable to our readers.

The printing telegraph is undoubtedly of American origin, and dates back as far as the year 1837, when an instrument was invented by Mr. Alfred Vail, the assistant of Prof. Morse in his earlier experiments, and afterwards the Superintendent of the original line between Baltimore and Washington. We do not know whether Mr. Vail ever practically operated his instrument, but it is fully described in a book published by him in 1845, which is probably the earliest treatise extant upon the art of telegraphy. This apparatus, as described, could be made to print communications over a wire, possibly at the rate of 30 letters per minute.

In 1840 Alexander Bain, a well known Scotch inventor, devised a printing telegraph, which, although ingenious and original in its conception, was extremely slow in comparison with other systems then in process of development, and was never brought into practical use.

From this time forward we hear of little or nothing being publicly done, in this branch of telegraphy, until 1847, when the telegraphic world was astonished and delighted by the advent of that splendid triumph of American ingenuity, the House printing instrument, which was brought out under the auspices of the "old telegraphic pioneer," Henry O'Reilly, and first put in operation during the fall of that year on the line between Cincinnati and Louisville. The first despatch ever transmitted over a telegraph line with a printing instrument was sent by that gentleman from Cincinnati to Jeffersonville, a distance of 150 miles. Only those who labored with, and assisted Mr. House in perfecting his apparatus, can have any conception of the difficulties that he was obliged to surmount in the development and practical introduction of his beautiful invention. But perseverance and skill conquered all obstacles, and, after a severe struggle against competing interests, the first regular House line went into operation in 1849, between Philadelphia and New York, and was extended to other parts of the country, until at one time there were over 2,000 miles of telegraph in the United States operated by means of this instrument. As full descriptions of the construction and mode of operation of this instrument are to be found in many of the standard works on telegraphy, it is unnecessary to attempt a detailed description in the present instance; it is sufficient to remark that the apparatus operated with the greatest perfection and accuracy, notwithstanding its apparent complication, and that the speed of its transmission has never yet been equalled, except, perhaps, by the experimental automatic system.

In conjunction with House Mr. Jacob Brett, of England, invented a printing telegraph, founded upon the same general principles as the American House instrument, but worked out in a different manner in many of its details, and which was patented in that country. It was by means of this instrument that the first despatch was transmitted through the first submarine cable—which was done from Dover, England, to Calais, France, October 17th, 1851.

The brilliant success of the House instrument started up a score of inventors, and the records of the patent

office, for a few years thereafter, teem with various devices of this kind, most of which, however, were hopelessly impracticable—being, for the most part, unsuccessful imitations, to a greater or less extent, of the House instrument. For nearly ten years the latter stood alone and unrivalled as a practical printing telegraph.

In 1856 David E. Hughes, of Kentucky, patented a printing telegraph, based upon principles in every respect radically different from all his predecessors. Heretofore a succession of electric currents had been employed to control the step-by-step movement of the type wheel till it had reached the desired position, when the impression of the letter was taken by appropriate mechanism, moved by applied power, and brought into action by the stoppage of the type wheel, or by a current sent upon a second line wire. Hughes abandoned this system entirely, and boldly struck out into a new and untried path. By an ingenious mechanical governor he caused the type wheel of the receiving instrument to revolve synchronously with the transmitting wheel of the sending instrument, and the electric current is merely employed for the purpose of releasing the impression apparatus at the instant the desired letter upon the type wheel is in the appropriate position. By this arrangement only an electrical pulsation is required for the printing of each letter, while in the House and similar systems from one to fourteen pulsations are required for each letter. In the working of long circuits this is a matter of much importance. Another peculiarity of the Hughes instrument consists in the extreme delicacy of the magnet employed. We have seen one of these instruments print with great facility on a battery composed of a grain of zinc and copper and a drop of water.

This apparatus was practically set to work between New York and Boston about the year 1857, by the American Telegraph Company, who are said to have paid \$125,000 for the patent. This company had also previously come in possession of the House patent. The form of the apparatus was much modified from the original design—an electro-magnetic governor, invented by G. M. Phelps, having been substituted for the vibrating spring governor of Hughes, and other minor changes made in the different parts, and in this shape it was quite extensively introduced on the American company's lines in 1857 and '58. But some practical difficulties arose in working it, not so much the fault of the apparatus itself as of the arrangement of the batteries and circuits. The Hughes system should be worked on an open circuit, owing to the delicacy of its receiving magnet, but as it was universally worked on a closed circuit, its very sensitiveness was the great difficulty to be overcome. But as it was thought preferable to use the closed circuit universally, the instrument was again reconstructed, and some of the features of the House machine incorporated with it, leaving, in fact, scarcely anything of the original invention beyond the synchronous type wheel movement. Most if not all of these improvements were made by Mr. Phelps, who is a gentleman of great ingenuity and experience in this class of work. The new design was known as the "Combination" instrument, and made its appearance in 1859. It turned out to be, all things considered, the most successful printing telegraph known, being nearly equal in speed to the House, and capable of working much longer circuits with smaller battery power; it was also far more simple in construction, and less expensive to build and maintain. It was rapidly coming into extended use when, at the end of the year 1859, a consolidation took place between the American Company, owning and using the printing instruments, and the Morse line, by which the American Company acquired the right to use the Morse patents, and these instruments gradually supplanted the printers on all except the most important lines. The combination instrument is still used on a few of the most important circuits between New York, Boston, Philadelphia and

Washington, and we think it might be employed on many other of the principal through routes to advantage. The original House instrument has been entirely superseded by its younger rival, and is not now, we believe, in use in a single instance. It is somewhat singular that the last, as well as the first, line to employ this instrument regularly was that from New York to Philadelphia.

After disposing of his patent rights in this country Hughes went to Europe, where he has since remained. He has been quite successful in introducing his invention in the different countries in Europe, and the number of instruments in use there is gradually increasing. Judging from published descriptions and documents, however, the apparatus has never been brought to as high a state of perfection there as in America. Other instruments have been brought out in Europe by Wheatstone, Siemens, Joly and D'Arlincourt, all of which, however, appear to be far inferior to the Hughes in speed and general efficiency. The honor of producing every printing telegraph which has proved to be practical for commercial purposes belongs to American inventors, whose designs seems to be characterized by a boldness and originality seldom found in those of any other country.

New Thermo-Electric Pile of M. Mure and Clamond.

THIS thermo-electric pile is made up of sixty elements. They consist of small bars of lead, or native sulphuret of lead, and of plates of steel. The bars are 40mm. long by 8mm. thick, and the plates of steel are 55mm. long by 8mm. broad, and 0.6mm. thick. In these couples galena is the electro-negative element; iron, the electro-positive. The form of the bars is such that, by placing them side by side, they form a ring of twelve couples, of which the interior is formed by the extremities which are to be heated. They are united in tension by means of tin solder. They are isolated from one another by thin mica plates. By placing five of these rings in a vertical column a battery of sixty couples is formed. These rings are isolated and separated by washers of asbestos. The whole is firmly held between two iron rings by means of three bolts. The pile thus forms a hollow cylinder, the interior of which must be heated. The cooling of the junctions, whose temperature should be lower, is caused by radiation into the air. The interior cylinder measures 50mm. in diameter, and about the same in height. The heated surface is about 78 square centimetres. The apparatus is heated by a gas burner, consisting of a steel cylinder 56mm. in diameter, closed above, opened below, and pierced with small orifices. This is placed in the centre of the pile. A tube pierced with holes surrounds this cylinder, and distributes the gas uniformly around it. The gas rises, and arriving at the orifices in the burner meets the air which is escaping from it, because of the draught of the tube of steel that surrounds the apparatus. Each orifice in the burner thus forms a blowpipe, the jet of which strikes the opposite side. Forty couples have an electro-motive force equal to that of a Bunsen element. Its interior resistance to cold is that of a copper wire 9.85mm. and 1mm. in diameter, but during its action it increases and becomes equal to 22mm. The current is intense in proportion to the feebleness of resistance. Visible sparks are obtained between the two electrodes. The current reddens a platinum wire 0.3mm. in diameter a length of 35mm. It also decomposes water. This pile, acting for ten consecutive hours, consumed 785 litres of gas, at an expense of two centimes and a half an hour. It is, therefore, an economical generator of electricity.—*Le Génie Industriel*.

The number of messages from postal telegraph stations in England, for the week ending March 5th, was 147,206.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., April 6th.

TO THE EDITOR OF THE TELEGRAPHER.

ON Thursday last Mr. Cyrus W. Field appeared before the House Committee on Foreign Affairs, in relation to the various bills now before Congress relative to submarine telegraphs. He argued against the provision in some of the pending bills, which gives the Government the free use of each cable one hour in every twelve, which, with the three Atlantic cables, would amount to six hours per day. He favored reciprocity between the United States and foreign countries in cable matters, and advocated a law imposing heavy penalties upon any person injuring telegraph cables. He presented a list of submarine cables now in successful operation in the different parts of the world, showing sixty-four of them, aggregating a total length of 22,007 miles; and also another list, showing the number of cables under contract to be completed during this and next year, with a total of 20,828. Mr. Field pressed on the committee the importance of establishing a submarine cable line from San Francisco to the Sandwich Islands, Japan and China, which would require, with the usual allowance for slack, over 8,500 miles of cable. This line would complete the circuit of the globe, in connection with the lines now in working order and the cables now under contract to be laid.

The minds of members of Congress and others, who have been very much exercised in regard to the monopoly of the French Cable Company upon the coast of France, will probably now be relieved. Official information has been received at the State Department that arrangements have been made between the French Government and the Cable Company to cancel the exclusive concession to that company for landing cables from the United States on French soil.

Telegraph matters have not been alluded to in either House, or taken up in committee, except to hear Mr. Field's argument, since my last communication. Postal telegraphy is so dead, for this Congress at least, that it is doubtful whether its friends will even attempt to call it up for any definite action.

The proposed vigorous investigation into lobby schemes, including the telegraph operations in connection with Congressional action, has, it is understood, fizzled out. Even Gen. Butler does not seem to have sufficient reckless audacity to attempt a second seizure of private telegraph despatches.

General Supt. Eckert and District Supts. Bates and Dowell, of the Western Union Telegraph Company, had a meeting here on Thursday of last week, for the purpose of making some arrangements for improvement in working through circuits South.

The new line between this city and Richmond, Va., which is being engineered by A. J. Baldwin, is being pushed forward. Material for it has commenced to arrive.

There is a good field for a properly constructed and managed line South. Such a line can be successful, and become permanently a part of the competing system.

A line built merely for the profit of contractors, who seek to get the most money possible for the poorest possible line, will prove a disastrous failure. Common No. 9 galvanized iron is to be used, which, of itself, is a discouraging fact. We shall wait with some curiosity the further development of this scheme. CAPITOL.

Interesting Facts in Supt. Gamble's History.

SAN FRANCISCO, March 8.

TO THE EDITOR OF THE TELEGRAPHER.

The following appeared in print during the existence of the U. S. T. Co.:

EDITOR DAILY FLAG.

* * * * * "The overland line has, probably, been the worst managed concern in existence. From its first completion it has been used by its officers for the purpose of speculation. * * * * * Mr. Gamble, the Superintendent, has been associated with other parties in using the line for private speculation, and it is known that, during the rise and fall in gold, he and others connected with him made a large amount of money (in the manner I have already described). Information, which rightly belonged to the public, has been withheld time after time, to give his friends a chance to operate. During the excitement at Reese River he sent one of his hands (an operator) to that place, who opened a broker's

office in the room adjoining the telegraph office, and in plain hearing of the telegraph instrument. Being a good sound operator this broker could read every word that passed over the wires and govern his bargains accordingly. On several occasions the press, both in California and Nevada, have charged it upon the Company that there was a leak somewhere. One of the Virginia papers declared that it was in the San Francisco office, but the matter was somehow hushed up. It has been a common remark among some of the operators, who are knowing to these things, that 'Gamble was making a pile of money.' Now, what seems more strange is that this new company should appoint this man to have charge of their affairs in California. Let Mr. Street examine into the matter, and, I venture to say, he will find that the half has not been told. Besides his extreme fondness for speculation he is not qualified or competent to have the management of constructing a line.

* * * * *

"If you see fit to lay this before the public I propose to have something further to say in regard to a system of mining stock speculations, which has been carried on by this worthy and his friends for the last four years.

"Yours, etc.,

TELEGRAPHER.

"San Fran., Nov. 14, 1865."

Comment is unnecessary.

L. N. JACOBS.

An African Telegraph.

TO THE EDITOR OF THE TELEGRAPHER.

RECENTLY, while perusing the "Annual of Scientific Discovery," I found a description of a telegraph in use among the natives of Africa. In the description which follows the system is not very definitely described, but I have been unable to ascertain anything which is more definite than the following, which may be interesting to the readers of THE TELEGRAPHER:

"It has been stated, in the report to the British Association, that the negro had never shown ingenuity enough to invent letters, symbolic or phonetic.

"That this is untrue is shown by the 'Elliombic,' or African telegraph, an instrument which has been in existence for time immemorial to the oldest inhabitants in the Cameroons' country, on the west coast of Africa. By the sounds produced on striking this instrument the natives carry on conversation with great rapidity, and at several miles distance.

"The sounds are made to produce a perfect and distinct language, as intelligible to the natives as that uttered by the human voice.

"The instrument is in universal practice among the Cameroons and up in the interior, in the Abo and Budi countries, a part of Central Africa not yet visited by Europeans. In visiting this part of Africa, in 1859, my coming was generally announced beforehand to the different villages by the 'Elliombic.'

"I questioned some of the oldest inhabitants as to the inventor, but none of them could tell me further than that they supposed 'it must have been some of their great grandfathers.

"This 'Elliombic,' therefore (which is a most ingenious invention), must have been in existence in Africa before telegraphs were dreamed of in England."—Mr. Jones, in the Athenæum, October, 1865.

I think it would be both interesting and instructive if some person could give, through the columns of THE TELEGRAPHER, a description of this instrument and the manner of using it.

KEY.

PERSONALS.

Mr. D. P. ANDERSON, one of the Chicago strikers, is now engaged in the Pacific and Atlantic office, at Indianapolis, Ind.

Mr. JOSEPH HARRIS, formerly operator in P. & A. branch office, in Merchants' Hotel, St. Paul, Minn., has accepted a position with L. S. & M. R. R., at their depot in St. Paul, as telegraph operator.

Mr. CLARENCE FISHER, formerly of Barrington, Wis., has taken charge of the Merchants' Hotel branch office at St. Paul, vice Harris.

Mr. A. R. CARY, formerly of the Atlantic and Pacific office at Rochester, N. Y., has accepted a position as night operator for the Lake Shore and Michigan Junction Railroad, at Wickliffe, Ohio.

Mr. A. F. BRANNAN has been transferred from Patona, Ala., S. R. & D. R. R. office, to Rome, Georgia, as operator and freight clerk.

Mr. D. R. SAUNDERS has returned to the Patona, Ala., office of the S. R. & D. R. R., and is warmly welcomed by his many friends.

Mr. Dow, of Minneapolis, has taken charge of Black Hoof, Minn., telegraph office, on L. S. & M. R. R. lines.

Mr. LOU ELBERT, of St. Cloud, Minn., has taken charge of L. S. & M. R. R. telegraph office, at Hinckley, Minn.

Mr. W. H. POPE has accepted the position of agent and operator of the S. R. & D. R. R., at Columbiana, Alabama.

Mr. E. DALLEY HEMPHILL, of Chester, Pa., has taken charge of the L. S. & M. R. R. telegraph office at Fon du Lac, Minn.

Mr. WM. POPE, formerly of Columbiana, Ala., has been transferred to the Colera, Ala., office of the S. R. & D. R. R.

Mr. F. W. HARTER, from Hebron, Ind., takes the position in the P. & A. office at Dayton, Ohio, resigned by Mr. MILLER.

Mr. D. T. BACON has resigned the position of assistant Superintendent of the Pacific and Atlantic Telegraph Company at Dayton, Ohio, to accept a situation as train despatcher of the Pittsburg, Cincinnati and St. Louis Railway, with headquarters at Logansport, Indiana.

Mr. W. H. NICHOLS, formerly of the Western Union New Orleans office, has accepted a position in the P. & A. Telegraph office at Memphis, Tenn.

Mr. Z. T. MILLER, assistant in P. & A. office at Dayton, Ohio, has resigned, to accept position as night operator of C. H. & D. R. R. at Dayton.

Mr. CHARLES SELDEN, one of the strikers who has been temporarily filling the position of night operator at Dayton, Ohio, on the C. H. & D. R. R., returns to his old place in the commercial news department of the Western Union office at Cincinnati, Ohio.

Messrs. J. McCONNELL and BENJ. JOHNSON, of Baltimore, have accepted a situation on the night force in the Washington, D. C., Western Union office.

The Postal Telegraph Fallacy.

WE have had occasion frequently to criticise somewhat severely the official organ of the Western Union Telegraph Company. In this we have not been actuated by any captious or personally unfriendly spirit, and we therefore experience feelings of satisfaction when we find anything in its columns of real value, and worthy of our commendation. Its issue for April 1st contains an able and exhaustive statistical statement of the results of postal telegraphy and cheap tolls in Switzerland, compared with the telegraph system of the United States, prepared by Mr. GEORGE B. PRESCOTT, the statistician of the Western Union Company. This statement comprises elaborate tables, showing the traffic and revenue of the Swiss lines from 1852 to 1868, the expenditures and the percentage of increase in telegraphic traffic, wire, receipts and expenditures, at various periods from the origin of the system to the present time.

The advocates of postal telegraphy in this country base their arguments mainly upon the alleged great success of cheap telegraphy in Switzerland and Belgium, and Mr. PRESCOTT's object, in which he is entirely successful, is to show that the premises do not warrant the deductions made from them:

It is ascertained, from official reports of the Swiss administration, that the total expenditures for telegraph service from 1852 to 1869 were.....\$1,724,497 82
The receipts for telegrams.....1,544,664 47

Loss.....\$179,733 35

During the 17 years 4,294,023 internal telegrams were transmitted, the receipts for which amounted to \$825,386 53, or 19 cents each; and 1,708,293 international and 507,758 transit messages, the receipts for which were \$719,277 94, or 32 cents each. The total number of messages transmitted during this period was 6,510,074, the receipts upon which amounted to \$1,544,664 46, or 23 cents each.

The average distance over which messages are transmitted in Switzerland is 50 miles, making the cost of each message per mile 4 6-10 mills.

The average tolls upon messages in the United States is 58 cents, and the average distances that they are transmitted 300 miles, making the cost per mile 1 9-10 mills, or less than one half as much as the average Swiss rate.

We have not space to reprint Mr. PRESCOTT's elaborate comparisons of receipts and expenditures, showing that, as a paying institution, the postal telegraph and cheap rates are a failure. He makes out his case, however, conclusively. Notwithstanding the advantage possessed by Switzerland and other European countries in cheap labor, the average annual salary of each employé amount-

ing only to \$193 55, or a monthly compensation of \$16 13, the telegraph service is performed at a loss.

In addition to the receipts from telegraphic service proper \$210,387 67 were received from "divers other sources," which the official report states are essentially composed of contributions from the Communes. The various States belonging to the Confederation are required to contribute towards the first cost of establishing telegraphic facilities in any given locality. Every community, desiring to possess a telegraph within its district, has to share *pro rata* in the expenditure attendant thereon. This contribution is regulated by a tax, fixed at 60 cents for every 100 inhabitants. There is a further stipulation, which requires from the local or municipal authorities a guarantee to pay the current office expenses at the minor stations during the first three years, and that the gross receipts at the central station of the district should reach at least a sum of \$1,400.

The official report of the Swiss Telegraph Administration for 1866 contains the following explanation regarding these forced contributions, and the necessity for continuing them:

"The general financial result is especially interesting, showing an excess of \$43,226 in receipts over the expenses—a sum which represents the net benefit to the Confederation from the telegraph since the origin of the institution. Or, as the divers other receipts, foreign to those of the telegraph proper, amounted during the same period to \$187,296 82, it shows that if the Confederation had not created these extraordinary resources—that is to say, if the Government had desired that the expenses of the telegraph service should be covered by the receipts upon messages, there would be a total loss of \$14,407 15.

"The financial position of the administration of telegraphs, although satisfactory, is not then so brilliant as it is sometimes represented, and it is therefore important that we proceed with prudence in the reduction of tariffs, and retain for awhile longer the extraordinary resources which have prevented the telegraph service from becoming a charge too heavy for the Federal budget."

Mr. PRESCOTT, at some length, demonstrates the fallacy of the advocates of the postal telegraph schemes, that the only thing necessary to make the service pay at the rates proposed is a sufficiently large increase of the traffic, assuming as a fact that there is comparatively no limit to the number of messages which a given extent of wires is capable of transmitting, and that the increase in the working expenses bears no considerable proportion to the increase of the volume of business; showing by statistics that the increase in the number of messages is accompanied by a proportional increase in the cost of lines, salaries and other expenses.

The following comparisons will serve to show the relative extent, use and tolls of the telegraph in Switzerland and the United States:

Switzerland, with a population of 2,510,494 inhabitants, has 2,662 miles of line, 5,606 miles of wire, 394 offices, and transmits 800,000 internal messages per annum, at a rate of 2 2-10 mills per mile.

The United States, with a population of 31,148,047 inhabitants, has 73,036 miles of line, 130,695 miles of wire, 5,029 offices, and transmits 8,000,000 internal messages per annum, at the rate of 1 9-10 mills per mile.

In Switzerland the proportion of miles of line to population is 1 to 940; of wire 1 to 448; of offices 1 to 6,000; and of internal messages 1 to 3 1-10.

In the United States the proportion of miles of line to population is 1 to 420; of wire 1 to 238; of offices 1 to 6,000, and of internal messages 1 to 3.

Thus the United States, as compared with the most favored country in Europe, has in proportion to its inhabitants more than twice as many miles of line, nearly twice as many miles of wire, an equal number of offices, and sends annually a larger percentage of internal messages. And in spite of the increased cost of the service from competition; in spite of the high price of labor, which is more than twice as much on a specie basis as in Europe; and finally, in spite of the high rate of taxation to which telegraph property is subjected in this country, messages are now transmitted throughout the United States in currency at a lower average rate per mile than in any country in Europe.

We would especially commend to the telegraphers who have been disposed to criticize our course in opposing the specious schemes for a Government telegraph, the consideration of this exposition of its practical results in the country where it has confessedly proved most successful. Unremunerative rates for telegraph

service means low salaries for operators. The rates proposed by Messrs. WASHBURN, HUBBARD, and other advocates of postal telegraph schemes, cannot, as may be mathematically demonstrated, pay the ordinary expenses of working telegraph lines at existing or even greatly reduced rates of compensation to employés in this country. Once established every effort will be made to reduce expenses and secure a favorable result, and salaries will inevitably diminish, there being then no chance to select employers, and no competition for telegraph labor. To us it seems as plain as that two and two make four, that the true interests of all telegraph employés are in opposition to postal telegraphs and postal rates for telegraphing.

THE TELEGRAPH.

(By Atlantic Cable.)

ELECTRIC CABLE CONCESSIONS.

THE HAGUE, March 31.—Animated debates have occurred in the Chambers recently on the question of ministerial concessions of special privileges to one of the two rival cables to America. The Ministers were at length instructed to equalize the terms.

OCEAN CABLE CONSOLIDATION.

LONDON, April 1.—The Atlantic Cable Company, after considering the proposed bill for consolidation of the Anglo-American with the French Transatlantic Cable Company, have given it their approval, three fourths of the stock supporting it. A resolution to this effect has been adopted at a meeting of the company.

FRENCH TELEGRAPH CABLE STOCK.

LONDON, April 5.—The French Cable Shares, according to the *Times*' money article, have declined recently because of a threatened new competition.

CUTTING THE TELEGRAPHS.

LONDON, April 6.—Advices received here from Spain represent that little is known of the state of affairs at Barcelona, as the revolters have cut the telegraph wires in every direction.

Atlantic and Pacific Telegraph Company.

THE business of this company has increased so much in this city that it is now found to be necessary to open a branch office in Cumberland street, near Fulton avenue, in Hildreth's Express office, for the accommodation of the residents of that portion of the city. Promptitude and despatch have characterized the management of this office in Brooklyn, and Mr. J. E. Fenn, the manager, is reaping the reward of his efforts in the increase of business.—*Brooklyn* (N. Y.) *Eagle*.

The Great Western Telegraph Company.

THE Great Western Telegraph Company is rapidly completing the line to Omaha. On the 5th inst. the wire was strung to within about forty miles of that place, and it was expected that the connection would be completed by the 15th inst. Mr. A. H. Bliss, the superintendent of the company, is now engaged in opening the offices through Iowa to Omaha.

National Line Cables.

Two telegraph cables arrived per steamer Bellona from England for the National Telegraph Company. Each of these cables is a mile in length, one containing five and the other three conducting wires. The five wire cable, weighing nine tons, was laid on Wednesday morning across the North River, from the foot of Seventy-seventh street to Guttenburg, by Mr. Robert Brown, the contractor, for the line between this city and Philadelphia. The other cable is to cross the Hackensack, Passaic and Raritan Rivers, and other river crossings between this city and Washington, D. C.

Prostration of Telegraph Lines.

THE northeast storm on Monday last was very severe, in some localities the most severe of the season, and telegraph wires and poles were prostrated in all directions. But few wires were working from this city on Monday evening, and it was not until noon of Tuesday that telegraphic communication was generally restored.

FOREIGN TELEGRAPHIC NOTES.

Mr. SCUDAMORE, Director-General of the British Postal Telegraph Service, entreates the public to avoid sending more messages than necessary to Ireland. The cross Channel cable from Wexford is broken, and, until the fault is rectified, none but messages of urgent business or matters of life and death should be transmitted.

The American Morse has just superseded the Brequet system of telegraphing between the Tuileries and the barracks in Paris. From eight A. M. until four P. M. the poor soldiers stationed at instruments have little more to send backward and forward than the monotonous despatch "Nothing new!" But the government is none the less vigilant.

Unsatisfactory Working of the English Postal Telegraph.

THE telegraphs are at length a Government department, and the result may prove, we hope, a public advantage. The new management cannot, however, be said to have proved as yet a brilliant success, and the mutterings of complaint are loud, deep and general. Influential merchants, who have hitherto used the telegraph extensively, are declaring that because of the system being now stripped of celerity and reliability (essential qualities) they are sending as few messages as possible. It was comparatively plain sailing for the "department," with the means at command, to become common carriers, through the book and pattern posts, and universal bankers, and life insurance agents, and also to determine upon a neat pattern for the message boys' uniform; but it seems open to doubt that, in taking over the entire telegraph system of the United Kingdom, and revolutionizing it to such an extent, the department has attempted too much—what is beyond its strength. There appears from the published lists to have been a great increase in the number of stations, and further additions to them may be expected from time to time. The review of the new corps of message boys at the General Post Office, in their smart uniforms, was an interesting sight, and Commander Scudamore's address to his troops was delivered with his characteristic *bonhomie*. This is all very well in its way; no doubt it is well to caution the youngsters entrusted with messages, in which the minimum of time in transmission is often of vital importance, against ring taw and leap frog; but more staid and sedate, and, to outward seeming, trustworthy persons than telegraph message boys, need more efficient checks and stimulants than a passing appeal to keep them honest and up to their duty, and it would be well for all parties that Mr. Scudamore should revert to some of the practices of what may now be called the old companies. The person entering a message is surely entitled to a receipt for the payment, and an interchange of record should be made of the time at which messages are both entered and delivered. It is, to say the least, an awkward thing for a messenger to be sent to a telegraph office with two or three pounds to pay for messages, and to return to his employer without a scrap of evidence that they have been paid for. Why not give a receipt for such payments as well as for a registered letter? We are sorry to hear that the hours of the telegraph employés have been extended, and hope that on this point we have been misinformed, and that Government is not to be a harder master than the companies.—*Mechanics' Magazine*.

A NEW office has been established at the corner of Fulton avenue and Cumberland street, Brooklyn, by the Atlantic and Pacific Telegraph Company, under charge of Mr. E. Hopkins, as operator and manager.

New Patents.

For the week ending April 5, and bearing that date.

No. 101,491.—APPARATUS FOR LIGHTING GAS BY ELECTRICITY. Walter J. Morris and William J. Reid, New York.

Claim.—1. The arrangement of the three magnets, A, B and C, on a gas-lighting apparatus, so that all are operated by one battery, but separately, substantially as described, and for the purpose set forth.

2. The magnet A, arranged on the gas-lighting apparatus to close the valve in the gas pipe, as set forth.

3. The magnet B, arranged on a gas-lighting apparatus to open the valve in the gas pipe, as set forth.

4. The magnet C, arranged to operate, by the combined action of its armature and of the spring U, the platinum tips e R, which produce the sparks, as specified.

5. The apparatus arranged substantially as described, to apply the full power of the battery, less resistance of the conductors upon each instrument, and upon only one, until its duty is performed, the currents then passing to the next instrument, and not passing through more than one magnet at a time.

6. The wires and springs so arranged as to form the electric connections, and retain them until the armatures have completed their full strokes, and then breaking them suddenly and completely, substantially as described, and for the purpose set forth.

7. The spring catches t u, and additional armatures p q, so arranged as to lock the main armature lever, as set forth.



SATURDAY, APRIL 9, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D.C.

Vice-President. W. O. LEWIS....New York.

Treasurer.....A. L. WHIFFLE...Box 39 P. O., Albany, N. Y.

Recording Sec..W. W. BURNHAM...Box 6010, P. O., New York.

Corres. Sec....F. L. POPE.....Box 6010 P. O., N. Y.

SINGLE COPIES OF THE TELEGRAPHER MAY BE PURCHASED AT THE NEWS STAND AT THE CORNER OF BROADWAY AND DEY STREET.

DON'T CROWD THE RANKS.

THE telegraphic ranks have become overcrowded of late years. The events of the last six months have demonstrated the fact, which had before become apparent, that there are more telegraph operators than the present or immediately prospective requirements of the business are likely to require. We call attention to this subject now, in order that it may be brought to the attention of telegraph operators, that they may discourage the wholesale manufacturing of new members of a profession which cannot afford remunerative employment for those who are already engaged in it.

A very brief reflection will convince any one at all familiar with the subject that we are right in our premises, and that we do not needlessly sound the alarm, and caution those already interested in telegraphy, and those who are proposing to become telegraphers, against the evils of an over supply of labor in this department. It is but just alike to those who are now struggling for a livelihood as operators, and to the hundreds who, through telegraph offices, and those pests and nuisances, telegraph colleges, are being educated for the future, that the results of the continuance of the present overcrowding of the profession should be plainly presented to them. During the recent war there occurred a great but exceptional demand for telegraphic services, because, in addition to the regular telegraphic business, which was excessively stimulated for the time, the Government employed a large number of operators in connection with its military operations. As a consequence, salaries advanced, and large numbers of young men and women applied themselves to acquiring the telegraphic art. When the war ended most of the Government operators were returned to ordinary service, and the demand for them was still further reduced by consolidations, and a gradual decline in the amount of business to be done. The consequence of this state of affairs was soon developed in the enforced idleness or transfer to other business of many operators. Salaries, of course, began to decline, although, owing to certain extraneous influences, no general reduction was announced. When a situation became vacant, however, it was filled at a less salary, and in this way there has been a steady decrease of compensation. Notwithstanding these facts the so-called Telegraph Institutes continued, and still continue, to issue their lying circulars, pretending that great inducements are offered for engaging in the business. These advertisements and circulars are scattered in the

country, and hundreds of country boys and girls, many of them destitute of an acquaintance with even the ordinary principles of grammar and penmanship, are induced to pay tuition fees, and waste weeks and months in becoming plugs, who have not the slightest chance of ever becoming decent operators. These are used in an emergency, however, to fill temporarily the places of competent operators, and compel the latter to accept such reduced compensation as telegraph managers may see fit to accord. We hope that every telegrapher will use his influence to defeat these swindling schemes, and keep cheap and incompetent operators from overcrowding the profession.

During the strike on the Western Union lines in January last, notwithstanding the large proportion of operators engaged in it, enough of these shysters, and of operators who had left the business, were found to enable that company to get along with its business, and compel the strikers to eventually accept such terms as the company saw fit to accord.

While in telegraphy, as in other professions, there is never an excess of operators fully instructed in their business—that is, competent to take charge of large offices, run and test wires, adjust instruments, batteries, &c.—there is no questioning the fact that the number of those competent to fill ordinary situations is largely in excess of the demand. The profession does not now offer sufficient inducement to retain permanently in its service persons of superior ability, as is shown by the constant abandonment of it by the best and most experienced operators, to engage in other more lucrative occupations. Almost every week we chronicle the fact of the retiring of operators, usually of the best and most intelligent class, for the purpose of engaging in other business. The number of paying situations in telegraphy is few and not increasing.

Of course it is for the interest of telegraph managers to have a surplus of professional labor, but it is decidedly not for the interest of those dependent upon telegraphy for a living that the number of operators should be increased until a larger field for their employment is developed. We hope, therefore, that not only will telegraphers use their influence to prevent learners from wasting their time and money on those swindling institutions called Telegraph Institutes or Colleges, but that they will also decline to aid in their own ruin by themselves educating any more operators than can be profitably employed. The tendency of salaries is downward, and the future compensation of telegraphers will, outside of the large offices, be greatly reduced, unless the number engaging in the business can, in some manner, be restricted.

A Telegraph College Graduate.

A TELEGRAPH Superintendent sends us the following application, received by him from a Telegraph Institute pupil, for a situation. We publish it *verbatim*, omitting names.

In a note accompanying this the Superintendent writes: "I send it to you, thinking that, perhaps, a *verbatim* publication of the letter might be beneficial, both to the lady artist and the proprietors of an institution that will allow a poor innocent female to spend her money at a Telegraph College, when she ought to be in a 'Deestrickt' school-house."

(Copy.)

OFFICE OF UNION TELEGRAPH AND
STENOGRAPH INSTITUTE,
OBERLIN, O., March 4.

Mr. _____
Sir I take my Penn to drope you those few Lines inn anser to advertment I saw inn one of the telegraph Pappers I would lik very mutch to come West and if you would be willing to Imploy me as operatur inn one of yoor offices I shold fell under grate ob I am tending telegraph school heer at obrlin I have bin heer bout tenn weekes we learn bey sound I should feel obliged to you if sow feit to employ me onn yoor rail road I understand writen Perfectfill well with the instruments and allsow well aquinted with the figers and Letters I can work on a paper insterment allsow and I Prefer a Papper

to sound and if you put confences a nufe to employ me I should try and dow my doeity faithfull to all Parties all though I would fell it my duty to under Instruction fore a week or tow to get the ways of the office and rode I have to make my one livehood in this world I will close by hopen a speeday replie and Plees tell wat wages and you Pay fore good operator and all yoor terms
I will close
Plees Direct

Obrlin Ohio
Box —

The penmanship of this model application compares well with its grammatical construction, orthography and punctuation.

It must be evident, to even the proprietors of one of these telegraph plug manufactories, that a girl or boy without the first rudiments of a decent education could never make even a respectable paper operator, and that money spent by such a one for tuition is as utterly wasted as though cast into the ocean. To receive tuition in such a case is little better than barefaced swindling, and we advise the country boys and girl to avoid all such concerns and save their money.

The West India and Panama Cable.

THE West India and Panama cable has been completed, and the cable fleet, comprising the steamers Suffolk and Dacie, with the cable on board, and accompanied by several transports, has already sailed from England to rendezvous at the Island of Jamaica.

Sir CHARLES BRIGHT, the well known and talented electrician and engineer, under whose supervision both the cables of the International Ocean Telegraph Company (connecting this country with the Island of Cuba) were laid, is the chief engineer of this enterprise, and will personally superintend the laying of the cables. He arrived here on the steamer Java, from Liverpool, on Wednesday of last week, accompanied by WILLIAM WALSH, Esq., the Secretary of the West India and Panama Cable Company. They sailed on Thursday last in the steamer Columbia for Havana *en route* to meet the cable fleet on its arrival. It is expected to have these important cables laid and the line in operation by the first of June next.

A Vindictive General Superintendent.

It is announced in the official organ that the number of strikers in the Central Division of the Western Union Telegraph Company was 219. Of these 98 have been restored and 121 left out in the cold. It is *not* stated, however, that General Superintendent STAGER, in order to fully impress the minds of those whom the necessities of the service obliged him to re-engage with the enormity of their conduct, with two or three exceptions, reduced their salaries ten dollars per month. This, of course, is another illustration of that same "just and liberal spirit" which this company has always manifested in dealing with its employes."

Wanted.

If any of our friends, who may have spare copies of THE TELEGRAPHER, No. 181, of January 1st, 1870, will forward the same to us, they will confer a favor upon us. Our supply of that number of the paper is entirely exhausted.

Meeting of the French Cable Company.

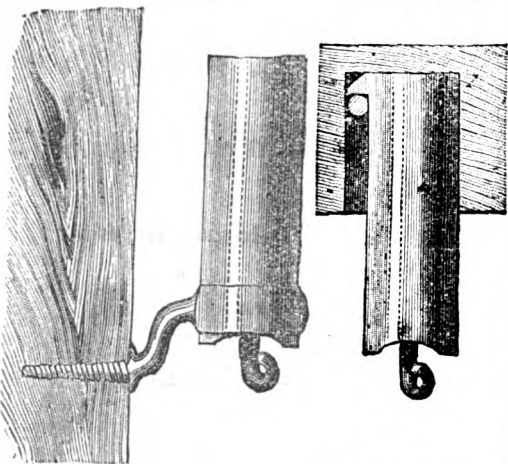
A RECENT meeting of the French Transatlantic Cable Company was held, to receive the report of the directors on the working of the Company to the end of the past year, and to discuss the treaty entered into between that and the English and American Companies. It appears that the total receipts of the Company, during the four months and a half ending December 31st, 1869, amounted to £37,650; the expenses of working and payments to telegraph companies and the French Government to £15,064. Of the net receipts five per cent. is carried to the reserve fund; £21,000 is appropriated to the payment of a dividend equal to 4 per cent. per annum on the 60,000 shares of the Company, and a small balance of £457 is carried forward. The report states that the new cable of

La Manche, between Brest and Salcombe, which has been successfully laid, only requires the completion of the land lines to bring the English lines in communication with that of the French Company. The report also states that the counsel of the company are still negotiating with the Government of the United States on the subject of the right of landing the cable, and hope shortly to arrive at a satisfactory conclusion. After a long description of the explanation given by the chairman the meeting adopted the propositions laid before it unanimously, and gave the counsel full power to continue their negotiations both with the French and American Governments.

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PREMIUMS! PREMIUMS!! FOR THE SPRING OF 1870, TO THE FRIENDS AND SUPPORTERS OF "THE TELEGRAPHER."

It has been the custom of the present publisher and editor of
"THE TELEGRAPHER"

to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to

INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES AND INJUSTICE practised by them upon its employes, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

The President of that Company, however, distinctly disavows this action, and says, in a communication to the editor of THE TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S) discontinuance and discountenance a test of competency for our service."

It will be seen, therefore, that this movement is one incited on the part of certain of the subordinate officials of that Company by personal spite and chagrin, because the paper has remained UNSWERVINGLY FAITHFUL to the interests of the Practical Telegraphers of the country, and could not be used for the personal ends of these disgruntled officials.

It remains to be seen whether the Practical Telegraphers of this country CAN BE RELIED UPON to stand by those who seek to secure to them JUSTICE AND FAIR TREATMENT.

In addition to the inducement offered above to exertions in support of the paper, we offer the following

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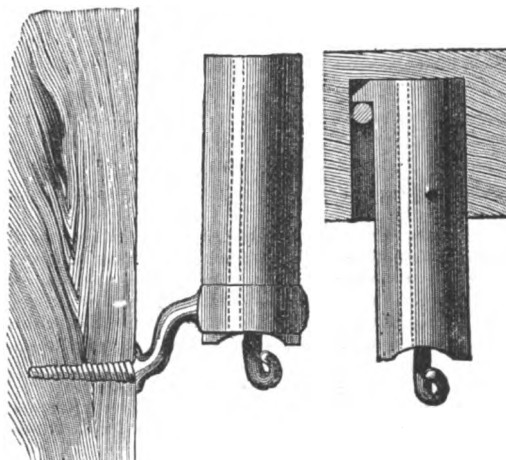
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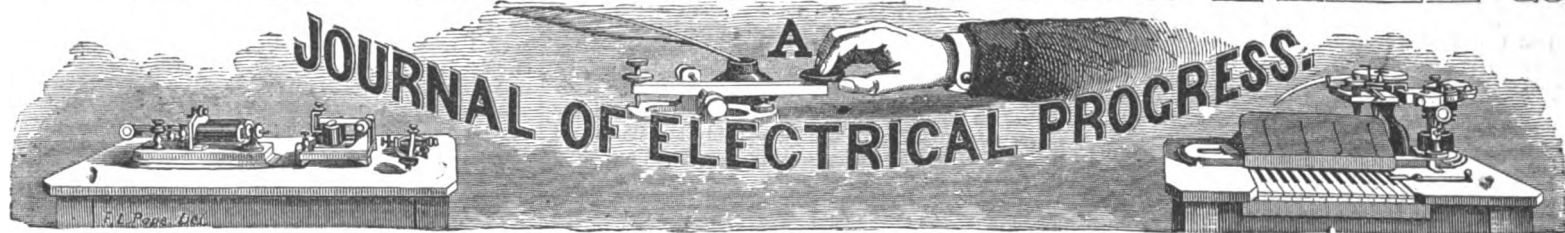
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Main Sounders, some as the above, with heavy armature levers without local connections, 75 cents less.	
Pocket Relays, with all the adjustments of the above, and good Lever Keys.....	22 00
Excellent Registers.....	40 00
Pony Sounders.....	6 75
Keys.....	6 50

All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package. He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

J. N. ASHLEY,
Publisher and Editor, (P. O. Box 6010)

THE TELEGRAPHER.



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Whole No. 196.

[Written for *The Telegrapher*.]

THE PRINTING TELEGRAPH.

ITS HISTORY AND APPLICATIONS.

II.

FROM the statistics given in our previous article it will be seen that, since the year 1860, the use of the printing telegraph instrument for commercial purposes has gradually increased in Europe, while in America the reverse of this is true—the number of instruments in use having gradually fallen off since that time. One reason alleged for this state of things is that the expense of operating them is too great—a person being employed to each machine, in addition to the operator, for the purpose of supplying the motive power. This objection, however, has been obviated in a new instrument invented by Mr. Phelps, a year or two since, which is driven by an electromagnetic motor, with a local battery, which forms an extremely convenient and comparatively inexpensive source of power. The printing by this instrument is performed in a manner differing from that of House or Hughes', but which cannot be readily understood without drawings and detailed descriptions. Though the instrument has proved itself a practical success, Mr. Phelps has not thus far succeeded in securing its introduction into the regular telegraphic service. If the present rapidly increasing extension of telegraphic facilities should continue, as it undoubtedly will, there can be no doubt that a demand will soon be found for an instrument of this character.

Notwithstanding that within a few years the printing instrument has fallen somewhat into disuse for commercial telegraphing, a new field has, within a short time, been opened for this class of machines, which is rapidly becoming a most extensive and profitable one. We refer to the various branches of city and local telegraphy, such as the reporting of financial quotations, police and private telegraphs, etc. The peculiar adaptability of the printing instrument to this class of work has only recently attracted attention, but the number of inventors who have already entered the new field seem to promise an early and thorough development of its capabilities.

The earliest invention, in the way of a printing instrument, adapted to this especial purpose, was that of Mr. E. A. Calahan, which was patented in 1868, and applied to the purpose of reporting the quotations of the New York Stock Exchange to the offices of the individual bankers, brokers and others interested in financial matters, in the vicinity of Wall and Broad streets. The peculiarity which principally distinguished this instrument from those used in ordinary commercial telegraphing consists in making the instrument automatic in its action, and thus entirely dispensing with the services of a receiving operator—no attendance being required other than to supply paper and ink, and the occasional re-adjustment of the type-wheel when thrown out of correspondence with the transmitting apparatus; a service readily performed by any person of moderate intelligence, if required. This apparatus was first practically employed about the beginning of the year 1868, and met with such favor that within a year and a half several hundred instruments were put in operation in this city by the Gold and Stock Telegraph Company, who purchased the Calahan patent. In fact, the receipts of this company exceed those of any telegraph company in the United States, with the exception of the Western Union.

Another instrument of the same class was invented about the same time by S. S. Laws, and was also introduced to a considerable extent for the purpose of reporting quotations. This was afterwards purchased by the Gold and Stock Telegraph Company. Both these instruments, although well adapted for the particular work for which they were designed, are somewhat crude in principle, as they require three line wires each. They are capable of recording about thirty characters per minute—equal to,

perhaps, six words. In 1868 T. A. Edison, of Boston, invented a printing telegraph suitable for this class of work, involving an entirely new principle—the combination of a polarized relay with the working magnets of the instrument—by means of which only a single line wire was required. A system of reporting instruments upon this principle was started in Boston, but failed to establish itself permanently. The following year (1869) Edison, in conjunction with F. L. Pope, of New York, invented a new instrument, involving similar principles, but modified and improved, which operated very successfully, and is now extensively used for reporting gold and exchange quotations by the Financial and Commercial Telegraph, of New York city. This company has fifty-six of these instruments working in one of their circuits.

The application of the printing instrument to private lines has of late attracted a good deal of attention, and a number of instruments have been brought out by different inventors, none of which have been altogether successful.

We learn that two or three new inventions of this character are nearly completed, which promise to overcome the difficulties which have heretofore stood in the way of the extended use of this class of instruments for private purposes. We shall notice these more fully as soon as they are publicly exhibited.

From the well known electrical and mechanical genius of many of the inventors who are now attempting to solve the problem of a cheap, reliable, and rapid printer for private lines, we cannot but think that their efforts will be, ere long, crowned with complete success.

The Darien Expedition.

THE correspondent of the *New York Times* at Panama, under date of March 31st, sends the following information relative to the telegraph corps with the United States Exploring Expedition. On the 22d of February, Washington's birthday, the great work of the survey was commenced from a point on Caledonia Bay, about half way between Caledonia village and the village of Sarsadie. The first stake was driven at 3½ P. M., and bearings taken from the north point of the Isle de Oro (an island on the outer shore of the bay), showing the course to be west southwest, one quarter south. A line of about one mile long was cut out, surveyed and chained off, and before 10 o'clock P. M. it was platted out on the new map of the United States Darien Survey. On the 23d of February, at 5 A. M., the surveying party started out again and returned at 6 P. M., having passed over about three miles of the proposed route. The telegraphic corps made a thorough survey for a shore line, connecting a point opposite the anchorage with the village of Sarsadie, a distance of six and a half miles. On the 24th it was intended to lay the line, but commander Selfridge ordered otherwise. Among the guard of honor, and the first man on the ground, where the first stake was driven for the survey, was W. H. Clarke, Esq., Chief Electrician. On Feb. 27 it was decided that the surveying of a second route from Sarsadie should be postponed for awhile. The surveyors on the first route had attained a height of 400 feet, and decided on the impracticability of that line of survey, falling back one and a half miles from their further point. Three and one half miles from Caledonia Bay they would commence another line of survey, running almost directly southwest. This would lead them over better ground and into the mountain passes proper.

March 7 the first part of the grand expedition sets out, following the trail of Capt. Selfridge and party. This expedition will make a clean survey of everything, and it is expected that in six weeks, at the furthest, the practicability of this route will be fully determined. A reconnaissance will be made over the Sarsadie route, perhaps as far as the Morti river, in a week or two, and possibly the two expeditions may join hands across the head

waters of the Chucuraqua. The telegraphic operations commence on the 7th. A line will follow the grand expedition even to the Pacific. The main office will be established on "Nipsic Point," just opposite to the anchorage of the two ships. The camp will be called "Harry Clarke," in honor of the Chief Electrician, and the office United States Telegraph office. The main office will be in charge of Lieut. McDowell; the travelling office under the special charge of Prof. Clarke, assisted by Mr. A. J. Mastin, who will have immediate charge of the construction.

The latest news from the expedition was to the 22d March.

The following telegraph was received on the 22d at "Nipsic Point," Caledonia Bay, and forwarded by the Diana:

"CAMP NO. 5, ISTHMUS DARIEN, }
March 22, 1870. }

To—, Aspinwall, Isthmus Panama.

I am at the front. We are progressing finely through the worst country I ever saw, on our way to the Pacific; impossible to write; everybody is well and in good spirits.

(Signed), W. H. CLARKE,
Chief Telegrapher."

A New and Startling Obstacle to Telegraphic Communication.

TROUBLES, it is said, never come in single files, but always in battalions. We have witnessed this here, in the heavy tariff of the Panama Railroad; the consequent diversion of traffic through other channels; the removal of the works of the Pacific Steam Navigation Company from Taboga to Callao; the coaling of the Royal Mail steamers at Jamaica instead of Colon, and in many other ways—all uniting to withdraw money from circulation, and to produce the gloom which at present overhangs the country. Lamentable are these things to reflect upon, but still more lamentable is it to know that another evil, which will fall little short of actual calamity, threatens us. There exists now well grounded fears that, for a lengthened period, traffic by the Panama Railroad will be entirely suspended. No doubt enterprise, and skill, and time, will remove obstacles, but while these requisites are being devoted to a good cause the great inconvenience may be imagined. Not a flood, nor the weakness of bridges, nor the falling of embankments, will produce what we predict, but the evil will arise from an entirely different and ludicrously novel cause. Strange it may appear, but true, nevertheless, though it be "mighty strange," but there is a painful probability of the entire track, or the larger portion of the track of the Panama Railroad being blocked up, and locomotives and locomotion being impeded through the agency of—dead monkeys! Laugh not, reader, but listen in these days of great events. We give you foreign authority for what we assert, and quote an extract from *El Siglo*, a Mexican journal of the 2d of March:

"The Panama Railroad Company has found itself compelled to double the force of its telegraphic batteries, on account of it being the custom of the monkeys—so numerous in that part of the world—to congregate and practice gymnastic exercise upon the telegraph wires. It is believed that the shock will be so strong that there will not be an acrobat in those woods able to resist its effects." Now, we draw rational conclusions from established facts, and intend to borrow the aid of science to make good the position we have assumed. Scientifically speaking, then, we believe it will not be disputed that the moment electricity comes in contact with monkey flesh the animal becomes petrified, after extending to enormous proportions—some say to the extent of the Polar bear; others employ the term "bug-bear." The double force of the electric batteries of the railroad com-

pany, which we have Mexican authority for stating no monkeys nor acrobats can resist, will kill them instantaneously, and they will fall, as a matter of course, in huge heaps along the track, and, until the obstruction be removed, traffic must be suspended. We think it must be admitted that we have argued this point logically, and the question is whether it would not be better to allow Columbian monkeys, who are not proof against electricity, to continue in their blunder-like amusements than to suspend traffic, even for a time, on the Panama Railroad?—*Panama Mail*.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our Correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, April 13th.

TO THE EDITOR OF THE TELEGRAPHER.

EXCESSIVE dulness in telegraph matters still prevails, and is likely to prevail here for the remainder of the session. The only event of any telegraphic significance in Congress, since my last letter, was the presentation on Monday last, by Mr. Sumner in the Senate, and by Mr. Dawes in the House, of the resolutions of the Massachusetts Legislature, in favor of the establishment of a postal telegraph. Mr. Hubbard, who belongs in Boston, and who, abandoning the hope of effecting anything here at present, has been at home for some time, succeeded in getting from his own Legislature this endorsement of his scheme. The preamble and resolutions recite the usual fallacies relative to the unreasonable cost of, and limited telegraphic accommodations, and the desirability of the establishment of Mr. Hubbard's monopoly, and request the Massachusetts senators and representatives to sustain Mr. Hubbard's bill. In each house the resolutions were appropriately referred and ordered to be printed, and that is the last of them—for the present at least.

It is understood that this is the initiation of a movement on the part of Mr. Hubbard and his associates to obtain a similar endorsement from the Legislatures of other States before renewing their efforts here. Evidently the postal telegraph lobby have changed their base of operations from the Capitol, experience having shown the impossibility, under existing circumstances, of effecting their purpose here without more substantial public endorsement than they have hitherto been able to obtain. Mr. Hubbard's scheme is so plainly for the purpose of establishing a telegraphic monopoly, and in the event of its proving unremunerative, imposing its cost upon the Treasury, that it has but few friends. Mr. Washburn's postal telegraph scheme is so clearly preferable, and so generally preferred, in case the Government is in any event to be saddled with the great expense attending an assumption of the telegraph business, that it has apparently extinguished Mr. Hubbard's scheme very effectually. At the same time, aside from the evident incapability of the satisfactory official administration of the telegraph business, as demonstrated by the failure in England, the great cost attending it will prevent its favorable consideration by Congress for some time to come.

In order that the members of Congress may be fully informed in regard to this subject, the officials of the Western Union Company have been engaged this week in distributing among them Mr. Orton's last annual report, and Mr. Prescott's exhaustive analysis of the financial statistics of the Swiss telegraph department. In connection with the latter document it may be stated that Mr. Washburn has received a somewhat lengthy communication from our minister to Switzerland, Mr. Horace Rublee, under date of March 21st, relative to the financial results of the telegraph in that Lilliputian Republic, copies of which he is furnishing to such newspaper correspondents as can be induced to use it. Properly considered, however, it is valueless in this respect, as he gives only totals, and does not distinguish the different sources of revenue; how much received for internal messages at the low rate; how much for transit messages at a high rate; or how much contributed by the communes for the introduction and support of the lines and offices. Unless this is done the mere figuring out of the surplus revenue for the year 1869 of 130,246 francs, proves nothing in favor of a postal telegraph. Mr. Prescott has fully demonstrated that, financially, the cheap Swiss rates are a failure, and more comprehensive and detailed statements than those of Minister Rublee will be required to negative the effect of his able and exhaustive statistical analysis.

To-day the House Select Committee on the telegraph held a meeting, and instructed Mr. Washburn to report his Postal Telegraph bill to the House. It would appear from this that the idea of a thorough and exhaustive in-

vestigation into telegraphic matters has been abandoned, and that Mr. Washburn's bill is to be reported and placed on the calendar of the House, where there is little danger of its being disturbed at this session. It was originally the intention of Mr. Washburn to accumulate a large volume of evidence, on which to base a report in favor of postal telegraphy, which should offset the able report of Mr. Farnsworth as Chairman of the Post-office Committee last year; but the persistent refusal of the House to authorize his Committee to send for persons and papers, has rather discouraged him, and he probably has abandoned the idea of accomplishing anything in that direction at the present session.

Mr. Cyrus W. Field has been here for some time, working for a charter from Congress for an ocean telegraph line from the Pacific coast to China and Japan, via the Sandwich Islands. With the construction of this line there will be continuous telegraphic connection round the world. It is desired by Mr. Field and his associates to secure American capital for this great enterprise, but thus far American capitalists have shown little disposition to invest in ocean cable enterprises. With a favorable charter, however, no doubt is entertained but that, if looked coldly upon by our own capitalists, European capital will be promptly and gladly invested in the enterprise. CAPITOL.

Sensible Management of the Western Union Lines South.—A Just and Generous Policy.

NEW ORLEANS, La., March 31.

TO THE EDITOR OF THE TELEGRAPHER.

SINCE the late "difficulty" I have seen nothing in the columns of THE TELEGRAPHER from this city, and will therefore attempt to state the condition of affairs here.

Before the strike Mr. W. A. L'Hommiedieu, formerly chief operator, having been appointed Supt. of the 12th district headquarters, Marshall, Texas, was succeeded by T. L. Brown, previously night chief, who in turn was succeeded by H. J. Fische.

By the way, I do not think any account appeared in your columns of a presentation made Mr. L'Hommiedieu by his former associates in this office before his departure for Texas. The presentation took place on Christmas Day, and the articles presented were a gold headed cane and a fine seal ring. It proved an entire surprise, and the occasion was a happy one, the more so as Mr. L. H. had invited us to his residence to partake of a farewell egg-nogg.

But to return. The new chief and assistant chief above mentioned had been in office but a few days when the strike was ordered. Belonging to the League, there was no option, and all hands struck.

During the struggle our course was the same as that of other cities—argument and strategy. When orders came to lay down arms there were eight left of the fourteen who struck. Out of that eight five were reinstated, leaving out three, one of whom has gone into another and better paying business. The other two are telegraphing again.

R. C. Duncan, who came south with J. Van Horne, General Superintendent, is now chief operator and James Newell is now night chief.

As to the present relations between the company and the operators, this office is a notable example of the benefits to be derived from a liberal, generous policy. Upon our return no penitential signatures, recantations or petitions were required. In going we stated sincerely that we had no local grievances, but went to support the rights of our fraternity in the North and West, and in obedience to sacred obligations. In returning we were met in a straightforward, honorable spirit, which dictated no degrading terms, but placed us quietly at our respective duties, and treated us with a just consideration.

The conscientious attitude taken by Mr. D. Flanery, the Superintendent of this district, discovered in him a Christian spirit, which has raised him in our estimation to a place of which any Superintendent might be proud. His position as a representative of the interests of the W. U. Company did not seduce him into that mean, small, persecuting and personal spirit into which others might have fallen. On the contrary, his intercourse with the strikers was at all times marked by a gentlemanly and courteous tone. These circumstances could not fail to impress favorably any set of employees, much less those who, like us, were prepared for a tightening of the chains, and to hear an ominous crack of the executive whip.

As one of the strikers, I venture to assert that I represent the feelings of my associates in saying that, had we been reinstated under an official curse, and ground down by oppression, we should have taken the key only as a means of living until some other business could have been secured.

It is, I think, plainly evident that the general policy employed by the greater number of officials of the W. U. Company towards their operators has been entirely

wrong, and many of their points of economy mistaken ones. Had they cultivated that cordial feeling with their employees which they might easily have done without detriment to their dignity, or to the interests of the company, this disastrous collision, which has cost so much, would not have occurred. As an instance of this argument I refer to Memphis, Tenn., where the only and principal reason that a majority vote was not given for a strike by the operators was, that they were warmly attached to their superintendent, Mr. Coleman. In that city the T. P. L. had but one member. The case might perhaps have been similar here, but that every operator in the place belonged to the League.

It is urged by short sighted functionaries that there are some in our profession, as in every other, who can only be made to do their duty by holding the lash above their heads; therefore (?) it is necessary to adopt a strict discipline towards all. Without asserting that some men are children all their lives, I will ask the question, does an intelligent horseman use the whip with equal force upon the obstinate balky horse and upon the eager thoroughbred? If this difference in character is acknowledged by the drivers of animals, what feelings should we have for those who, having been placed in charge over their fellow men, fail to manifest equal intelligence? PICKWICK.

An Ex-Member of the League Explains, and Desires Information.

WASHINGTON, D. C., April 4th.

TO THE EDITOR OF THE TELEGRAPHER.

I HAVE sat myself down for some time past quietly, listening to the several correspondents commenting upon the present "Telegraphical" topics of the "period," and do not now wish for one moment to take up the space in your columns which some others may be able to use to more advantage, but think, perhaps, by saying a few things which will be approved by some few in this office, and asking one or two questions in plain English, I may be able to show things up in their true light to those who are often throwing out slurs to those who came back in this office on January 16th.

Had it not been for three or four members of the League, who showed so much importance, and were continually pushing themselves forward, there would probably never have been a break in the Washington circuit. These few stood ready to vote down any motion made which was not in strict accordance with their views, or in compliance with their extraordinary good judgment. Correspondence were grappled by them, read, and if they thought best, they were handed to the Secretary to be read before the meeting, if not they were handed to the flames to be carried aloft. If any necessary work was to be done these few had engagements somewhere else; but if any money was to be handed in, then it was, "My child, I am at your service;" and then you ought to have seen the bold chevaliers marching up for their fees.

We could stand this for awhile, but we were soon convinced that it was "played out," and a mere speculation; and after resigning and withdrawing from the League, hearing no objection to such withdrawal, we were free from our obligation, and perfectly at liberty to return to duty, which we did, and which step I have no reason to regret.

One question and I am done. Can any one of the "children" of said circuit give us any information in regard to the \$500 that was subscribed and paid into the Treasury of the circuit about January 10th? Some members of the Typographical Union are asking us, and we would like to give them some information. One man who came back on the 16th had drawn \$50 from the League, which he paid back to the Treasurer on the 17th; one other man drew \$25, and another \$5, which they (sensibly) retained. We would respectfully ask the Treasurer if he cannot give us a statement, that we may pass it along the line, and by so doing satisfy ourselves and all interested. PAYO.

A Model Order.

OUT WEST, March 24.

TO THE EDITOR OF THE TELEGRAPHER.

THE following letter was recently received by a circuit manager from a battery man. I copy, *verbatim et literatim*:

"TO S. T. P.—

"SIR—According to the ohms law of Elementary principles of the Alphabet of Electrical Tension of Batteries, ye will soon be plaid out Iff you don't pay better atensionium to what I call for. I want to get 66 zinks and 20 fete of coper wire as soon as possible.

"Yours trooly,

PAT SHEA.
RELAY.

How is that for high?

Effect of Weather on Insulation.

LA CROSSE, WIS., March 28.

TO THE EDITOR OF THE TELEGRAPHER.

WILL you please explain the following to me. In "Brooks' Insulator" pamphlet I find these remarks: "In summer there is very perceptible escape in working a line of telegraph, say 200 miles, even if every insulator is perfect, but in the cold of winter the line will hold a charge, which is an indication of high insulation. With circuit open at the distant end you cannot make dots in rapid succession but must wait for the charge to leak out, which takes time; you can make a dot only once in ten seconds, or in a proportionally greater interval, as the line is the better insulated."

With circuit open at distant end how are you to make dots at all, or if you make them, how will they be made visible or audible to you when a relay will not work?

N.

Let our correspondent station himself at one end of a well insulated line, 100 miles or more in length, having his own key open, and also the key at the opposite end of the line. Now, if he will put a moderate but not excessive tension upon his relay spring, and commence to write dots, he will find that his relay will close on the commencement of the first dot with a sudden jerk or snap, and immediately open again, while the remaining dots will affect it slightly or not at all; but after an interval of a few seconds he can repeat the experiment as before. The effect will be more marked in proportion as the line is longer or more perfectly insulated. This phenomenon is caused by the electricity of the battery rushing through the relay to charge the wire; but the latter, when well insulated, is charged almost instantly, and no more can enter from the battery until the charge already in the wire has had an opportunity to escape, which it does in a few seconds, by leakage at the supports, &c. If the line be connected to the ground at the distant end, the electricity escapes from that end of the wire as fast as it is supplied by the battery, and a constant current is kept up. The latter is the normal condition of a telegraph line in the American system of working, or of any closed circuit which includes a battery. In a very long wire, say 1,000 miles, its resistance is equivalent to partial insulation when closed or connected with the ground at the further end, which renders it impossible to send over such a long line at a very high rate of speed.—[ED. TEL.

The Course of the Clinton, Iowa, Circuit of the T. P. L. in the Strike Explained and Defended.

CLINTON, IOWA, April 5th.

TO THE EDITOR OF THE TELEGRAPHER.

FRIEND X., in his article, dated at Sacramento, published in your issue of April 2d, errs in supposing that the Clinton, Iowa, Circuit of the T. P. L. was influenced in its decision to withdraw from the League by reports of any kind, circulating from any source, in regard to the action or reason for the action of California men.

Your correspondent is at liberty to state that the course of this circuit was taken only when members found themselves being drawn into a position of hostility to the C. and N. W. Railway. Our League chief operator held the situation of chief operator upon the Eastern Iowa division of the road, and every League member was in the employ of the road, with a single exception, and there the operator had received his position in W. U. employ upon the recommendation of the officials of the railway telegraph department, and was subject to the rules and discipline of that department.

Members of Chicago and Omaha Circuits understand the position of Clinton Circuit during the strike better than can distant telegraphers. As long as neutrality was allowed neutrality we professed. We had no connection with the W. U. Company, save under the railway management of all W. U. lines, and discharge of all business, commercial or other, upon its route.

Our chief operator had for years held a position of trust with the road. Members of the circuit felt that neutrality was the true course, and they wished to remain lookers on. When came the necessity for acting with or against the telegraph department of the road, but one course could be taken. Our situation was peculiar to no other circuit, and our course is liable to be misunderstood by those not conversant with it.

MEPHISTOPHILES.

PERSONALS.

Miss ALICE SELLEW, formerly employed in the ladies' department of the Western Union office, at 145 Broadway, has accepted a situation with the Manhattan (City) Company, at the Ashland House, corner Fourth Avenue and Twenty-fourth street.

Mr. CHAS. E. CLARK, late operator in the W. U. Co.'s Albany office, has accepted a situation with the Harlem Extension R. R. Co., as ticket agent and operator, at Rutland, Vt.

Mr. GEO. A. LANCE, late of the Buffalo W. U. office, is at present employed in the Albany office, same company.

Mr. EUGENE CADMUS, for a long while operator in the W. U. Co.'s Albany office, has accepted a position in the Boston, Mass., office, same company.

Mr. A. J. SUNDERLIN, late of the W. U. Co.'s Delevan House (Albany) office, has accepted the position of book-keeper with W. H. HAMILTON & Co., grocers, Albany.

Mr. VAN NESS BALDWIN, of Saugerties, N. Y., is now in charge of the Delevan House office, Western Union Company.

Mr. W. A. CROOKS, late of the W. U. Co.'s Montpelier, Vt., office, is filling a position in the Albany office, same company.

Mr. W. C. BUXELL, late manager of the W. U. Co.'s Troy, (N. Y.) office, is now engaged in the insurance and real estate business in Troy.

Mr. ALPHONSO PRESCOTT is at present manager of the W. U. Co.'s Troy office.

Mr. WM. STONEBACK, late night manager of the Pacific and Atlantic Company's office in this city, has resigned, to engage in other business.

Mr. HINMAN, formerly of the W. U. office, 145 Broadway, has been appointed night manager of the New York P. and A. office, vice STONEBACK, resigned.

Mr. COGLEY, formerly of Pittsburg, Pa., has been appointed operator in the P. and A. New York office.

Mr. COOPER, formerly of the Western Union office in this city, has been appointed cashier of the Pacific and Atlantic Company's New York office.

Mr. A. H. SPRACKLEN, one of the Chicago strikers, has accepted a situation at Whistler, Ala., on the Mobile and Ohio Railroad.

Mr. ELI ALLEN has been appointed operator at Phelps, Iowa, on the St. Joe and C. B. line.

Mr. JOHN MCGREGOR has resigned the managership of the Prescott office of the Montreal Telegraph Company, to engage in the lumber business with his father. The Ottawa (Canada) *Evening Mail* speaks highly of Mr. MCGREGOR, and expresses regret at his departure.

Mr. MACFARLANE, formerly of the Montreal office, takes charge of the Prescott office of the Montreal Telegraph Company.

Miss CORA L. HASTINGS, formerly of Bellerose, N. J., has taken charge of the Franklin office at Bedford, N. Y.

Mr. CHARLES ELLIS has resigned his position in the train despatcher's office of the St. Joe and Council Bluffs R. R., to accept a situation on the Kansas Pacific line. His late associates much regret his departure, and the train despatcher loses a good and efficient assistant.

Mr. H. C. CAMP has been appointed operator at Hamburg, Iowa, on the St. Joe and C. B. R. R., in place of Mr. J. D. JONES, relieved.

THE TELEGRAPH.

(By Atlantic Cable.)

TELEGRAPH COMMUNICATION WITH INDIA.

LONDON, April 8.—The telegraphic service with India, via Suez Canal and Bombay direct cables, promises to meet the expectations of the most sanguine. Messages are coming through promptly. At present rates a ten word message between New York and Bombay costs only \$17.50 in gold.

THE NEUTRALITY OF TELEGRAPH CABLES.

PARIS, April 12.—The Emperor has appointed a commission to consider the political status of ocean telegraph cables, and to report what, if any, technical or international obstacles there may be to their absolute neutrality.

Viscount de Vougy, Director-General of the French Telegraphs, has ordered the translation of Prof. Morse's Report on the Telegraph Apparatus of the Exposition of 1867, for distribution in France.

The New Southern Telegraph Line.

THE new telegraph line South from Washington, D. C., intended eventually to reach New Orleans, has been completed to Alexandria, Va., the first station beyond Washington. Poles have also been distributed along the line of the Orange and Alexandria Railroad to Lynchburg.

Progress of the Great Western Telegraph Company.

THE lines of the Great Western Telegraph Company are completed to Des Moines, Iowa, and offices have been and are being opened throughout the State by the Superintendent of the Company, Mr. A. H. Bliss. The new line is doing a fair and increasing business, which, as important points are connected, will become more valuable. The poles are set between Joliet and St. Louis, and the wire will be strung as soon as the roads are in condition to permit the transportation of material. Superintendent Bliss has been at Davenport, Iowa, of late, prospecting and organizing his forces for future effective operations.

FOREIGN TELEGRAPHIC NOTES.

THE construction of the telegraph from La Union to San Salvador, Central America, is advancing rapidly, under the personal superintendence of Mr. Billings. The greater number of the posts are already erected, and a room is being fitted up in the Government House for the office.

A representative of Messrs. Newall & Co., of London, has been negotiating with the Sultan of Turkey for a concession of a network of cables to connect the Dardanelles and Constantinople with all the principal islands of the Turkish Archipelago.

On the 15th March there were in Switzerland 465 telegraph offices. The total length of lines in operation was 4,568 kilometres, and of wire 9,878 kilometres. The aggregate cost of the lines to that date was 1,671,472 francs; of apparatus, offices, &c., 323,819 francs; making the total cost 1,995,291 francs. The total receipts for the year 1869, including tolls on internal and transit messages, assessments on the communes, &c., reached 1,053,357 francs. The cost of administration for the same time was 923,104 francs—showing an apparent profit of 130,246 francs.

The Secretary of the Indo-European Telegraph Company (Siemens line, via Prussia, Russia and Persia) announces that telegraph messages are now arriving with rapidity and accuracy, and that at two o'clock on March 21st a despatch from India was received, dated at 12.26 the same morning.

A special meeting of the Atlantic Telegraph Company was to be held in London, April 1st, to take into consideration a bill now pending in Parliament to dissolve the undertaking.

The British Indian Telegraph Company have made a call on the stockholders of £2 per share, payable April 21st.

Advantages of a Postal Telegraph.

IN England, since the Government took possession of the telegraph, those who have occasion to send despatches find it necessary to mail a letter at the same time to say that it is coming, and to repeat its contents, for safety, should it run into the ground entirely by the way, as is very apt to be case.

Information Wanted.

ANY information of the whereabouts of the "Duke of Palestine" would be thankfully received and suitably rewarded, by his afflicted and anxious friends at 145 Broadway. The Duke disappeared several days since, in the most mysterious and unaccountable manner.

Recent British Patents.

Provisional protection for six months.

No. 225.—HENRY BROWN GREENWOOD, Minson road, Morris Park, South Hackney, London.

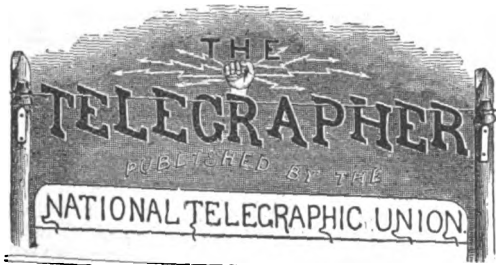
Improvements in electric telegraphs, 23th January, 1870.

No. 409.—JAMES STONY, Paris.

An improved method of constructing telegraph cables for the support of insulated conductors, for communicating intelligence between nations and foreign countries by electricity. 11th February, 1870.

No. 627.—SAMUEL ELKINS PHILLIPS, Francis Terrace, Hackney Wick, London.

Improvements in electric cables or conductors.



SATURDAY, APRIL 16, 1870.

J. N. ASHLEY.....Publisher and Editor.

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President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.

Vice-President. W. O. LEWIS....New York.

Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.

Recording Sec. W. W. BURHANS...Box 8010, P. O., New York.

Corres. Sec....F. L. POPE.....Box 8010 P. O., N. Y.

THE RIGHT SPIRIT.

THE communication which we publish this week from New Orleans, over the signature of "PICKWICK," shows the result of a kind and liberal policy on the part of Western Union officials towards the employes of the company subsequent to the strike. It affords us much pleasure to publish this communication, for besides the interest in it, arising from the desire to hear from our Southern friends, it illustrates and demonstrates the advantages and benefits of the policy which, at the time, we suggested to the managers of the Western Union Company. It contrasts favorably the intelligence and liberality which has characterized the management of its affairs South, and the stupid vindictiveness which, to a great extent, has controlled the management in the Eastern, Central and Pacific divisions. While in the latter the treatment has been felt by the employes generally to have been such as would naturally be extended to a subjugated and conquered enemy, whose services the necessity of the conqueror obliges him to use, in the former they are treated as men, who, having seen the error into which they had fallen, are hereafter to be regarded as entitled to no less kindness and consideration than before. The most superficial knowledge of human nature would satisfy any one of ordinary intelligence which plan would be most likely to result to the interest of all parties concerned.

While it is useless now to consider whether the movement which resulted so disastrously, not only to the operators but to the company as well, was advisable or justifiable under the circumstances, it must be conceded that there was previously a widespread and very general disaffection on the part of the employes of the Western Union Company. They felt that their interests were not, in the estimation of the managers of the company, as identical with those of their employers as they should have been. Particularly in the Eastern and Pacific divisions there was manifested a tyrannical and overbearing disposition, especially on the part of the higher officials, which could not but alienate them from the company. At the same time there was a general desire on the part of the employes that a collision should be avoided, and no demonstration be made until the League had acquired sufficient strength to seek, with a fair prospect of success, an amicable arrangement between the employes and the company, which should harmonize their relations and obviate any existing cause of dissatisfaction. The determination and efforts of Messrs. MUMFORD and GAMBLE, of San Francisco, to precipitate a collision and develop the extent and power of the League, prevented the realization of these pacific intentions. Unprepared, and not thoroughly organized, a premature movement resulted unfavorably. For the time, at least, the power of the League was crippled and its efficiency destroyed.

The officials here seconded to the utmost the efforts of their California associates to destroy the organization. The operators were obliged to succumb. Disheartened and discouraged they returned to their situations, compelled for the time to accept such terms as the managers of the company should dictate.

Two lines of policy were open to the company. They could, as they did on the Eastern, Central, and Pacific divisions, impose terms and conditions which most of the disaffected employes considered humiliating and distasteful; or, as stated by "PICKWICK," was the case on the Southern division, receive them kindly, ignore the past, and seek by justice and conciliation to obviate the discontent and dissatisfaction previously existing, or which would be likely to arise from the failure of the strike. The first course gratified the pride and vindictive feelings of officials swelling with an overweening idea of their own importance; the second secured the esteem, coöperation, and kindly feelings of the employes, and inaugurated an era of good feeling which could not but result advantageously to the company, the public, and the operators.

On the southern division no silly attempts have been made to forcibly suppress THE TELEGRAPHER, or dictate to the operators in matters with which the company has no proper concern. They are regarded and treated as men and not as children. This shows not only the mutual good feeling which exists there, but a shrewd knowledge of human nature creditable to the general Superintendent and his subordinates, who unite with him in carrying out his just and sensible policy.

During the more than two years that the present editor has conducted the telegraphers' organ there have been but few complaints received from Southern operators. While from the divisions managed by general Superintendents ECKERT, STAGER and GAMBLE we have received and published scores of communications making known grievances which demanded correction, we can hardly recall one such from the South. On the contrary, when Southern correspondents have spoken of their superintendents they have spoken of them kindly, and with evident esteem and regard. The different course pursued there and elsewhere since last January explains this fact, and we congratulate the stockholders of the Western Union Company that in one section, at least, its interests are in the hands of men of sense, and whose discretion is superior to feelings of petty tyranny and vindictiveness. We heartily welcome "PICKWICK" to our columns, and hope to hear often from him and our other numerous friends in the South.

Telegraph Colleges Once More.

We are again receiving newspaper advertisements and circulars of telegraph colleges and institutes (so called), with requests that we should expose them. We have done this so frequently and so persistently that we are getting rather discouraged. It seems almost as useless as warning our country friends to beware of pocket-book droppers, flash jewelry swindlers, &c., when they come to the city. They read the warnings, chuckle over the greenness of the victims, and congratulate themselves on their own smartness, and when they visit the city are victimized in precisely the same way.

We have warned our rural friends, from whom most of the victims of these swindling telegraph colleges are recruited, over and over again of the character of such establishments, and the lying nature of their statements of rapid attainment of proficiency, and the great emoluments and honor awaiting their students. But what good? Like other swindlers they continue to find victims.

The best antidote to their circulars and advertisements is for every telegrapher to constitute him or herself a committee of one, to caution all whom they may have reason to suppose are likely to be victimized, and by their persistent personal discouragement prevent all whom they can influence from throwing away their time and money on such establishments.

"Mother" Snow's Victims.

WE are pleased to inform our telegraphic friends that all the young ladies who, for their participation in the strike, became the subjects, and to some extent the victims of the malignity and vindictiveness of "Mother" SNOW, the Manageress of the ladies' branch of the city department of the Western Union Company in this city, have, with one exception, obtained situations. We hope that the remaining "victim" may shortly be provided for. This consummation, while it will rejoice every reasonable and sensible person, whether connected with the Western Union Company or otherwise, will doubtless prove anything but satisfactory to "Mother" SNOW and her confre and supporter, the General Superintendent of the Eastern Division.

Address Wanted.

WILL Mr. SAMUEL B. JONES, who, about a month since, addressed a letter to POPE, EDISON & Co. on business, please send his address to that firm. His letter was dated simply, "Office Canada Railroad."

Obituary.

MR. CHARLES ROBINSON, who was formerly well known as a telegrapher, and the constructor and first Superintendent of the Fire Alarm Telegraph in this city, recently deceased at Bergen, N. J., of pneumonia.

MR. ROBINSON for several years was well known in telegraphic circles, and was an electrician of much ability. He was, we believe, the originator of the Fire Alarm Telegraph in this city, and it was mainly through his persistent exertions that it was adopted, and after much delay and difficulty finally got into successful operation. He personally assisted in its construction, and so small was the confidence in its benefits and success that great difficulty was experienced in obtaining the necessary funds for its construction, and MR. ROBINSON might frequently have been seen, with a ladder on his shoulder and a coil of wire in his hands, engaged in the work of construction, when funds were wanting to employ the necessary labor. The system established by him has been in operation here, with such extensions and additions as the growth of the city required, until very recently superseded by the new Fire Alarm Telegraph constructed by the Messrs. C. T. & J. N. CHESTER.

MR. ROBINSON was a man of kindly and generous impulses, and his decease is lamented by many friends and acquaintances who knew him during his years of connection with the telegraph interest.

For the last four or five years he had retired from business to his home in New Jersey, and to many of his friends this announcement will be the first information of his death. The pioneers in telegraphy are rapidly passing away in the ordinary course of nature, and a new generation is taking their place. Among these pioneers, especially in Fire Alarm Telegraphy, the subject of this brief tribute has held no unimportant place.

"After life's fitful fever he sleeps well." His virtues and his foibles are buried with him. May he rest in peace, and the former be kindly remembered and the latter buried in oblivion.

The Pacific and Atlantic Telegraph Company.

THE Pacific and Atlantic Telegraph Company have in contemplation, during the present season, the extension of their line from Memphis to New Orleans by the river route. Two additional wires are in process of construction between this city and Philadelphia, and are expected to be in operation in about three weeks. They are already completed to Newark, N. J. The office in this city is doing a good and rapidly increasing business, which necessitates this addition to the facilities. To accommodate the city business wires are now being run, and in a few days a number of city offices will be opened. It is understood that arrangements have been made between the P. and A. and the Franklin to jointly occupy a new and commodious office about the first of May, when their present main offices will become branch offices of those lines, if continued.

GREAT REDUCTION
IN PRICES OF
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Owing to the decline in gold, and other circumstances, we are now supplying our superior quality of

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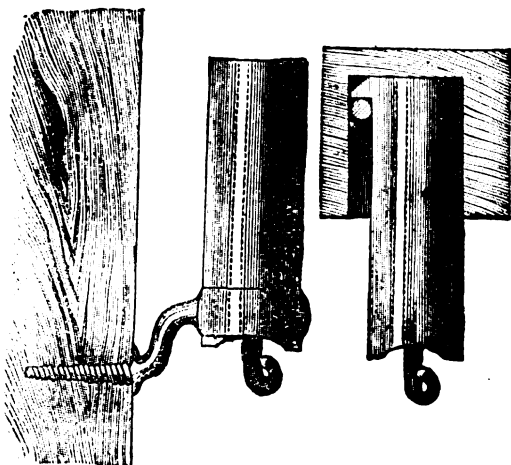
at prices much below former rates. Parties desiring the Best Wire at the Lowest Price should call upon us. Having sold over 6,000 miles of this Wire during the past eight months, to the satisfaction of the parties purchasing, we know whereof we are speaking.

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They are warranted not to break or part.
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Pamphlets furnished, with full description.
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THE BROOKS INSULATOR, with the PATENT COMPOUND WIRE and our PATENT MAGNETS, constitute the best Telegraph Lines ever constructed.

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PREMIUMS! PREMIUMS!!
FOR THE SPRING OF 1870,
TO THE FRIENDS AND SUPPORTERS
OF
"THE TELEGRAPHER."

It has been the custom of the present publisher and editor of "THE TELEGRAPHER" to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES AND INJUSTICE practised by them upon its employes, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

The President of that Company, however, distinctly disavows this action, and says, in a communication to the editor of THE TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S) 'discontinuance and discominence' a test of competency for our service."

It will be seen, therefore, that this movement is one incited on the part of certain of the subordinate officials of that Company by personal spite and chagrin, because the paper has remained UNSWERVINGLY FAITHFUL to the interests of the Practical Telegraphers of the country, and could not be used for the personal ends of these disgruntled officials.

It remains to be seen whether the Practical Telegraphers of this country CAN BE RELIED UPON to stand by those who seek to secure to them JUSTICE AND FAIR TREATMENT.

In addition to the inducement offered above to exertions in support of the paper, we offer the following

LIBERAL PREMIUMS FOR NEW SUBSCRIPTIONS.

This offer will be good until May 31st, 1870.

For TWENTY-FIVE SUBSCRIBERS we will give to the person sending the names and money a

NO. 1 BOX RELAY (WARRANTED).

For TWENTY SUBSCRIBERS a No. 1 TELEGRAPH KEY, either Caton or Self-Closing, as may be preferred, and a copy, either of "Modern Practice of the Electric Telegraph" or "Sabine's Electric Telegraph."

For FIFTEEN SUBSCRIBERS a No. 1 TELEGRAPH KEY, any pattern that may be desired.

For TEN SUBSCRIBERS, the Fourth Edition of "Cully's Handbook of Practical Telegraphy."

For SIX SUBSCRIBERS, "Noad's Inductorium" and "Sabine's Electric Telegraph."

For THREE SUBSCRIBERS, F. L. POPE'S "Modern Practice of the Electric Telegraph."

In addition to the above, we will give to the person who shall, on or before the 31st of May, send us THE LARGEST LIST OF SUBSCRIBERS, not less than FIFTY,

A TWENTY DOLLAR GOLD COIN!

For the second largest list, not less than THIRTY-FIVE,

A TEN DOLLAR GOLD COIN!

Subscriptions must be for one year, or equivalent to that, and at the regular subscription price of the paper,

TWO DOLLARS PER YEAR.

Subscriptions for less than a year will be counted as fractional parts of one subscription.

Any of the Premiums offered may, at the option of the receiver, be changed for other articles of equal value.

Remittances may be made by Post-office order or registered letter, at the risk of the paper. From remittances of not less than Five Dollars the expense of the money order or of registering the letter may be deducted.

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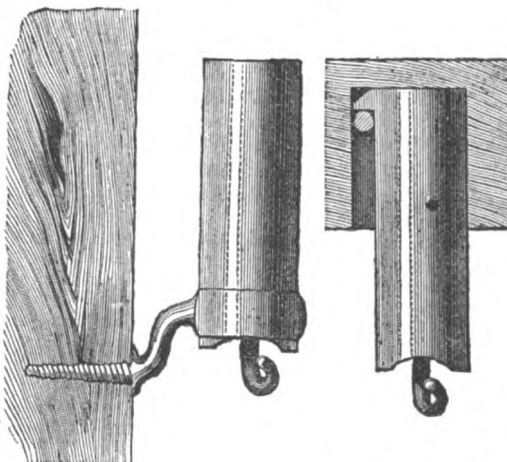
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FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same.

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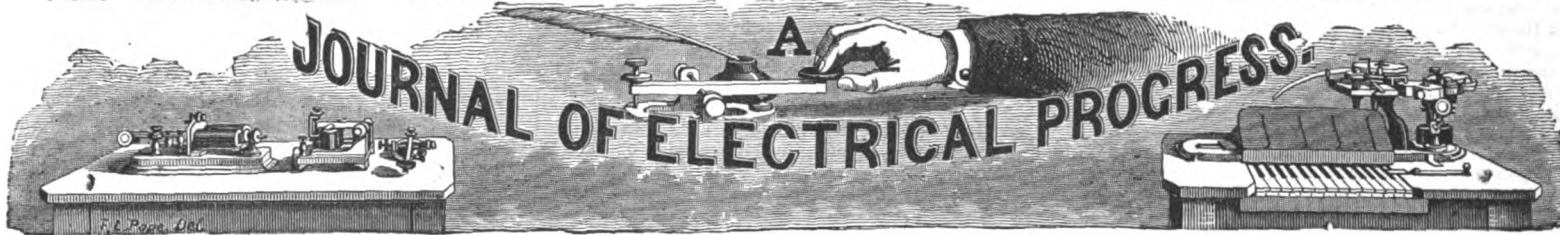
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Button Repeaters.....	\$6 00
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THE TELEGRAPHER.



Vol. VI.—No. 35.

New York, Saturday, April 23, 1870.

Whole No. 197.

THE NEW YORK CITY FIRE ALARM TELEGRAPH.

THE construction of an entirely new Fire Alarm Telegraph for the City of New York is a work of such importance and magnitude, and involves such developments and adaptations of electrical and scientific principles as to make it a matter of general interest. For this reason a very full and complete account of the telegraph now in process of construction in this city, and which has been completed and put in operation below Fourteenth street, has been prepared for THE TELEGRAPHER.

It had long been felt that the old Fire Alarm Telegraph, constructed originally under the superintendence of Mr. Charles Robinson, recently deceased, although at the time creditable and satisfactory, had, by the growth of the city, become insufficient for its requirements. Accordingly, a few months since, a contract was made by the Commissioners of the Fire Department with the widely and favorably known firm of C. T. and J. N. Chester to construct an entirely new system of Fire Alarm Telegraph, not only adequate to the present wants of the city but which could be made to meet additional requirements from time to time, arising from the growth and extension of the city. The Chesters, immediately upon the execution of the contract, entered upon the work with their accustomed energy and enterprise, and under their management the city has now become the possessor of a Fire Alarm Telegraph system which, in many respects, greatly surpasses in completeness and efficiency that of any other city in the world. The wires are run on poles through the different streets instead of over the tops of houses, as in Boston and some other cities. The American compound wire is used, with suitable insulation to insure its perfect working.

It is essential to the useful working of a Fire Alarm Telegraph system that it should be always ready to respond instantly to the demands upon it; that the message sent should be positively reliable; that the condition of the out-door structures should at all times be under complete inspection at the Central office; that an ordinary injury to the out-door structures may be instantly known and quickly repaired; that this injury, if not very extensive, may be of no serious detriment, and that a printed record of the transactions of the day, and the fidelity of those in charge, shall be produced.

To give a clear idea of the manner in which these varied and somewhat difficult requirements have been met, will require a detailed explanation of the construction and arrangement of the lines and apparatus.

LINES.

These are so built that only a few stations are embraced in each, and they are so interwoven that contiguous stations are upon different lines, so that an injury to one line, which might put one station out of order, would have no effect upon the next nearest station—because the latter would be placed in connection with a distinct separate line. The lines are constructed on poles running through the streets instead of being carried over houses, as in Boston and many other cities. The American compound wire has been used throughout in building the line, and the designating number of each wire is placed under it upon the cross-arm on every pole, by which means any wire may be instantly identified. The various lines extending from the Battery to Spuyten Duyvil all finally converge at the Central office—one end of each of the fifty-six coming in from the north and the other end of each from the south. They leave the tall poles in front of the headquarters, and are conducted carefully over its roof and down to heavy spars, whence they pass directly into the office. Here they are continued systematically to the batteries and instruments, but are so colored as to designate the particular office which each has to serve.

INSTRUMENTS.

The instruments and appliances at the Central office consist of batteries, switch board, register or receiver, indicator, transmitters, clock, repeater and testing apparatus. The apparatus outside of the Central office consists of automatic street signal boxes and mechanical gong strikers. All of these instruments are of the most perfect and elaborate construction, and most of them especially invented, designed, and made for the service of the complete system.

BATTERIES.

These are compactly arranged in a series of shelves, so as to be easily accessible. The shelves and stands are very thoroughly insulated, and the peculiar form of the battery keeps it perfectly clean and dry. An improved form of Daniell's battery is employed, in which the two solutions are separated by their respective gravities instead of a porous cup, as in the ordinary form. A regulated supply of sulphate of copper solution is steadily furnished to the battery, the supply being carefully adjusted to the work required to be done. It is stated that this battery requires not more than one tenth of the material and labor in maintenance than the old forms of battery do. The whole number of cells of battery required to operate the lines is more than 2,000. Beside these batteries others are provided for special purposes. The wires leading from these batteries are carried into the operating room symmetrically, and with a view to their easy and instant identification.

THE SWITCH BOARD.

This is a superb affair, mounted upon a slab of highly polished marbleized slate, nine feet in length, and has upon it upwards of five hundred switches, each performing its own special duty—but also arranged and grouped together so that very many may be moved by one common impulse, as when it is required to convert certain series on the entire number of lines from receiving to transmitting lines. To prevent oxidation the rubbing surfaces are heavily coated with platina. This combination gives the operator in charge the power of instantly applying to each and every line the changes which will be described. The Fire Alarm wires are all worked in "metallic circuits," instead of the earth being employed for the return current, as in ordinary telegraph lines, and for this reason slight defects of insulation and contact with houses or poles do not seriously affect the working of the circuits. Exigencies occur when it becomes desirable to divide the lines for tests or repairs. Through the switch board the operator turns his north end into the earth, with or without a battery; also the south end, with or without a battery; or, in case of the apparent weakening of the battery, as made evident by a little tell-tale instrument yet to be described, he has the power of testing the exact force of his battery either off or on the line. He can also instantly exchange his enfeebled battery for his choice of several fresh ones, and he may change the course of the current of either of these fresh batteries—or, finally, he may place any one or all the lines in communication with the "repeater," thus changing them from receiving lines to transmitting.

Usually it is desirable to send out the alarms, not only to all the alarm stations—that is, the engine houses, &c.—but also back again to the signal boxes throughout the whole island. The change, therefore, of all the lines from "signal" (that is, those that give the first alarm to the Central Office) to "alarm" (that is, those that receive the alarm sent out from that office) can be effected by almost a single movement on the switch board. In order to give simplicity and order to the arrangement of this instrument, each and every line has its series of switches for these various changes arranged in rows. Every switch has designated upon it, in raised letters, the office it performs. Each and every line is alike, and each is numbered. They are also divided in sections of eight

lines, so that it becomes quite easy to refer to any line without loss of time. Immediately in connection with the switch board is a series of

GALVANOMETERS.

These instruments measure the force of current on the line by the deflection of a needle. It is a valuable register of the state of the line—for the normal condition of the line being twenty degrees, ten degrees would indicate that the battery was becoming weak, and forty degrees would indicate that the battery was becoming stronger, which could not easily occur—or else that the resistance at the line was lessened, or that the current had found some shorter route than through all the length of the line with its numerous magnets. This measurement by degrees would be only an approximate indication of the state of things. A "differential galvanometer" and graduated set of resistance coils is, therefore, provided, which may be instantly applied to any line, and its resistance measured with the utmost exactness. Mr. C. T. Chester has devised a very convenient form for this purpose, by means of which the changes may be made almost instantly, and at the same time can be read off in decimal numbers, indicating miles and tenths of miles. The resistance of the lines is measured daily and recorded in a book, and are readily accessible for reference at any time.

THE REGISTER, OR RECEIVING INSTRUMENT.

This is the apparatus by which are recorded all the alarms that are sent into the Central Office, and all the tests of the day and night. The currents from the lines do not immediately proceed to this machine, but through the usual intervention of the relay magnets, of which fifty-six, in very compact form, are arranged upon the register table. These relays act upon the register, and also, at the same time, upon an electric annunciator, by which the number of the line is indicated. When a signal is communicated to the Central Office from a street box it first breaks the current, that flows through the line at all times, and holds the relay magnet steadily charged. This break discharges the magnet, its lever falls back, and, in so doing, instantly performs four operations: First, it throws down into view the number of the line called into action; it causes a bell to be rung; it starts the register wheel-work into revolution, and it prints a dot in ink upon a broad band of paper, which is rolled slowly through the machine. If this single action was all that took place a single dot would be printed on the paper, which would run out about three inches, and then the revolution would instantly cease; but it can be arranged that the paper shall run only two inches, more, or less, before it stops. As long, however, as the line continues to send signals, just so long will the paper keep running—always stopping, however, two inches, more or less, as adjusted, after the very last impulse from the line. This paper roll is about ten inches wide. Fifty-six pens, actuated by fifty-six magnets, are arranged beneath it, so that each and every one may be brought to bear upon the paper. Each one is connected with a separate line. The pens are numbered, to correspond with the lines, from one to fifty-six.

Suppose that the signal 256 is to be sent in. The street box which sends this particular signal is one of those connected with line No. 21. The operation, then, of the bringing that box into action is, first, to start the paper roll into movement, and to throw into sight No. 21, to call into action the twenty-first pen, which, with great exactness, prints the signal 256 in ink upon the paper five times, and then the paper stops itself two inches after the last printed dot. Thus every signal sent over any of the lines is printed upon this same roll of paper, either day or night. But the paper also records clearly another signal, which is automatic. A fine regulating clock is suspended on the wall of the office. Precisely at each hour, on the beat of the first second, a type corresponding with the hour of the day strikes upon the

paper roll and prints it. In the daytime the hour figures are different from those indicating the night hours. At the same moment a small bell is started, ringing continuously, notifying the operator in charge that the hour has come, and that he must proceed and test all his lines, and print the record that he has done so upon the paper. His duty is then to open for an instant each and every key on each and every line. These keys being arranged in groups of eight, may be struck in groups or singly. The single touch of all these keys makes upon the register paper fifty-six dots corresponding with the fifty-six lines; and if no alarm of fire should come in to be recorded on the same paper, on any one of the lines, then, at the commencement of the next hour, it would be printed in the same way as before on the paper, and another series of tests would be made. Thus, at the end of a day's operations, the paper would show that between the striking of every hour, day and night, every line had been tested and its good condition recorded upon paper; or, if its pen failed to make a record, explanation of the cause would be sought for and the difficulty obviated. Whatever fire might occur between any hours would also be recorded in its appropriate place, and the paper thus becomes a record of the locality of every fire, the time that it occurred, and also the sound condition of all the lines. The clock which serves to actuate the printing of the hours upon the paper can also be made easily, by the agency of certain switches, to strike the precise commencement of any hour upon each or all of the six hundred stations embraced in the entire system.

(Continued next week.)

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Obituary.—Changes.—Appreciation of the Telegrapher.

MINNEAPOLIS, April 13.

TO THE EDITOR OF THE TELEGRAPHER.

It is with sorrow and regret we hear of the death of one of our sisters in the telegraphic profession. Miss L. Atherton departed this life at Middleton, Vt., on the 29th of March. Miss A. has figured conspicuously in several places, always winning firm friends by her universally kind and lady-like treatment of those around her. Her remains were brought to Hastings and interred. She had attained great proficiency in her profession.

Some changes have transpired here of late. H. C. Mahoney, formerly of Illinois, Ill., has accepted "X" night office of the M. and St. P. R. Co. His urbane countenance is heartily welcome here. W. G. Collins, of New Lisbon, Wis., has accepted night report in "Na," vice Mr. Merrill, who has gone back to Milwaukee and works St. Paul circuit.

We, of this part, were with the boys in their late trouble with the W. U., and felt for them in their defeat. There was no circuit of the League here, but we were on the point of organizing one when the strike occurred. Now we are "ried" upon this question of abolishing our organ, THE TELEGRAPHER, and propose to do all we can to sustain it in its good work. We have been having a beautiful spell of weather for the past two weeks—thermometer not falling below 65, and mounting to 80, with cool nights, that are charming for evening promenade. More anon.

PLURG.

Congress and the Telegraph.

WASHINGTON, D. C., April 20th.

TO THE EDITOR OF THE TELEGRAPHER.

THE statement that the Special Committee on the Telegraph had instructed Mr. Washburne to report his telegraph bill complete to the House, was erroneous. It was so understood at the time, but it has since been ascertained that no final action has as yet been taken by the Committee. At the meeting of the Committee referred to the talk of the members showed that a majority favor some connection of the telegraph with the postal service of the country, but no agreement was reached. Mr. Dawes suggested that it would probably be better to wait until it could be ascertained how the project worked in England. Finally, it was understood that Mr. Washburne should draw up and submit to the Committee a report, embodying his facts and arguments, and the Committee adjourned.

The principal telegraphic event here, since the date of my last communication, has been the introduction, in both houses, of Mr. Cyrus W. Field's bill for the incorporation of the Pacific Submarine Telegraph Company.

It was introduced by Senator Sumner in the Senate, and by Mr. Dawes in the House, and in both referred to the

respective Committees on Foreign Affairs. (An abstract of the bill is printed elsewhere.—ED. TELEGRAPHER.)

There has as yet been but little if any opposition to this measure developed, and it is believed that Congress will pass it without much difficulty, and grant a liberal but not unreasonable amount of land in aid of the enterprise, upon the terms proposed in the bill. It is understood that, as soon as the bill passes, orders will be given for the construction of 9,000 miles of cable, and that the required soundings and surveys will at once be ordered by the Navy Department, so that no unnecessary delay may take place. An effort will be made to obtain the required amount of capital in this country, but if it is not promptly subscribed the money can at once be obtained in Europe.

In the Senate, on Monday last, Mr. Cameron, of Pennsylvania, presented a memorial of the Philadelphia Board of Trade, remonstrating against the incorporation of a company to absorb the present telegraph companies, and against the Government purchasing the telegraph lines of the country.

Mr. Anthony submitted a resolution, which was considered by unanimous consent and agreed to, that the Committee on Printing be instructed to inquire into the expediency of constructing a line of telegraph between the Capitol and the Government printing office.

In the House a bill was introduced by Mr. Reeves, of New York, authorizing telegraph communication between the United States and Central and South America.

CAPITOL.

Telegraph Matters in Chicago.—Little Great Men and One Good Manager.

CHICAGO, April 11.

TO THE EDITOR OF THE TELEGRAPHER.

SINCE the ending of the strike everything has been very quiet in telegraphic circles here. Many of us have undergone the affliction of being compelled to listen to the Colonel's little speech, and been rewarded by ten hours per day and eighty dollars per month. When an insurgent interviews the Colonel he is assured that the Colonel was sorry, very sorry, that the strike had occurred; also, that the Colonel felt greatly grieved to think that he could not enter the operating room without making the employees look anywhere but at him—as he never done anything to merit such exhibitions of aversion—and so on for an hour if the poor sinner will listen. The Colonel is full of wrath and indignation towards THE TELEGRAPHER, and has forbidden its being brought into the office. He, as well as his superiors, know that while the operators have a fearless and vigilant organ, such as our paper has always proved itself, we cannot be entirely subjugated. Therefore, it was resolved that the paper should be squelched; but, alas! for the peace of mind of such little great men, THE TELEGRAPHER shows no signs of an early decease, and their feeble attempts at its suppression have awakened a determination in the telegraphic fraternity to sustain it and its independent editor more vigorously and effectually now than heretofore.

Next in importance to the Colonel is the General, who, although small in stature, is a man of many promises, pompous, and thoroughly selfish. The General is not possessed of great talent or ability. He goes through the world with an air that is intended to convince the inhabitants that he is not only General Superintendent but a General—late Quartermaster U. S. Volunteers. The inhabitants smile and let him pass. The last failure of the General was his attempt to kill THE TELEGRAPHER. All of the officials here are bitterly opposed to having their words or actions appear in print. An operator was refused work in this office because he had been standing near the Colonel when that Ex-Quartermaster made a weak and foolish remark, which was afterwards published, and of which the operator knew nothing. It is nearly time that these persons learned to treat employees in a proper manner, and until they do they must expect their actions to be criticised—perhaps unpleasantly to them. Our celebrated night manager is as funny as ever. As an illustration, one night several of us operators were making considerable noise, when the gentleman sternly informed us that "he could dispense without that."

Leaving such a trio it is a pleasure to mention Mr. R. T. Rankin, the Manager of the Western Union office, a gentleman to whom the Chicago public give the credit of being the head and brains of the monopoly in this city. In the many years that Mr. Rankin has been in charge I do not think that he ever made a remark that has offended the many who have been connected with him, and who have learned to respect and and like the man for possessing gentle instincts, which makes it a pleasure to meet him. Since the consolidation Mr. R. has undoubtedly taken many bitter pills, but through all he has treated subordinates with consideration and kindness.

Many changes have occurred since the surrender. A. L. Baker and J. C. Whitford are working for the A. & P. Charley Patch is with the Great Western. Jno. Leatch holds forth at the P. & A. Maynard Huyck is chief clerk in a general baggage office. Mr. Foote, and several others who have wealthy relatives, are on the town.

Yours, OPERATOR.

The Cincinnati Telegraphers.—A Growing Evil.—Appreciation of the Telegrapher.

CINCINNATI, O., April 6th.

TO THE EDITOR OF THE TELEGRAPHER.

WHILE reading our paper, during the last month or two, I have noticed that the telegraph affairs of this village have been sadly neglected; so, in the absence of a better pen, I feel it my bounden duty to, in a manner, dispel this cloud of ignorance. Everything is in statu quo here, and goes on smoothly with the W. U. operators—a fair proportion of whom were taken back by Superintendent Williams after the strike had ended, and can be again seen in their accustomed places, though some of our best men have gone—not exactly "where the woodbine twineth," but—into other business. W. M. S., our old night report man, and celebrated catcher of the equally famous "Night Owl" B. B. Club of 1869, has accepted a situation on the reportorial staff of the *Evening Orb*, alias *The Chronicle*. Robert W. has taken a like situation with the *Pittsburg Commercial*, while our jolly old friend, Glass, we hear, has been appointed manager of the Great Western office at Davenport, Iowa. No better appointment could have been made, and I congratulate that company on its acquisition. Though everything is quiet with the W. U., I hear murmurs of discontent from our brethren in the P. and A. office in this city, who are not at all satisfied with the way things are managed there. Two good men, first class telegraphers there, have lately been requested to resign, without a moment's warning, while there is a great cry of rage and reproach if the poor telegrapher, in getting another situation, should leave their employ at short notice, and for no apparent reason, by the superintendent, whose headquarters are some hundred odd miles southwest of here. I will not mention his name now for he is pretty generally known. "Why is this thus?" Has this valiant superintendent gathered courage from the defeat of the late movement, or has it taken this long for the innate meanness to strike through? Query.—If, as general, a strike had occurred on the lines he tries to superintend, as the late one on the W. U., wouldn't it have "shut up the shop" in a mighty short time? "A hint to the wise is sufficient," says the old proverb. Though I am not interested in this matter any more than as a telegrapher, still I like to see justice done men who work early and late for considerable less salary than, as a general thing, the other company pays. We all appreciate our paper here, and its coming is eagerly looked for. We hope to greatly extend its circulation in this section this and next year.

VIRGINIA.

Another Response to Vidette.

PITTSBURG, April 8th.

TO THE EDITOR OF THE TELEGRAPHER.

I NOTICE our friend "Vidette" rushes into print with a very characteristic letter, to sustain the positions taken in his former communication. We feel very much humiliated to learn that our understanding of the English language differs so materially from that of our friend. It is certainly very consoling to learn that "Vidette" commends the course pursued by Mr. Rowe, and his commendation will doubtless have its weight in the proper quarter.

Two of the gentlemen referred to in "Vidette's" first letter as having considered the terms too degrading to resume their positions with the W. U. Co., were, on the contrary, very glad to resume on any terms, and are now working for that company. The letter signed "W. U. Operators" was not the sentiments of one man but of every man in this office.

"Vidette" would do better if he confined himself to matters in his immediate vicinity; he is too far removed to make a faithful exponent of our views.

PITT.

Eccentric Management and Uncertain Positions.

CINCINNATI, April 12.

TO THE EDITOR OF THE TELEGRAPHER.

THE operators of the P. & A. Co. in this city, although not directly connected with the late "unpleasantness" are beginning to feel its effects to the bitter end, under the regime of the enterprising and efficient (?) Superintendent who, last fall, attached a large poster on a wagon in a

public procession, proposing to put a "griddle" round the earth in forty minutes.

Several operators have already been notified by the aforesaid "efficient" (?) that their resignations would be accepted, accompanied in only one instance by any change. In another instance the unsuspecting victim held quite a pleasant, and, as he thought, flattering chat with the enterprising reformer, in which delicate hints were thrown out of early promotion to a night managership. Imagine his surprise, after the pleasing "picture," on receiving notice next morning to quit. This unlooked for event was followed in two or three days by another notice, from the same all powerful source, to resume work, another wretch having incurred his displeasure.

This slaughter seems to be indiscriminate, and each individual expects his invitation next. The history of this Dogberry's connection with the Southern Co., how he obtained his position, &c., would make an interesting volume, and show up his "points" to advantage. Gamble had better look to his laurels. We anticipate high times soon, as he proposes to move his headquarters, "griddle" and all, to this city. More anon. VINLAS.

To Correspondents.

REPAIRER, Q. OFFICE.—Your question about the insulation of lightning rods is one which has been very much discussed, and it is impossible to decide which side has the best of the argument.

PERSONALS.

Mr. WM. ASKY, of Dakotah, Ill., has retired from telegraphing, to engage in other business.

Mr. E. L. PARMALEE has resigned his position at Springfield, Ill., on the T. W. & W. Railway, and accepted a position in the Western Union office, St. Louis, Mo.

Mr. KIT DOUGHERTY, formerly of Fort Madison, Iowa, has accepted a position in the St. Louis, Mo., Western Union office.

Mr. CHARLES D. ELLIS, formerly of the St. Jo. & C. B. Railroad, at St. Joseph, Missouri, has accepted a position with the Kansas Pacific R. R. at First View, Colorado.

Mr. W. R. MONROE, manager of the Western Union office at Pictou, N. S., has resigned, and intends to rusticate for a time.

Mr. C. E. ROBINSON has been appointed manager of the Western Union, Pictou, N. S. office, in place of Mr. W. R. MONROE, resigned.

Mr. CHARLES T. DAY has been transferred from the Hartford, Conn., to the New Haven, Conn., Franklin office.

Mr. WM. M. SPINK has accepted a position as night report operator with the Pacific and Atlantic Telegraph Company, at Cincinnati, O.

Mr. CHARLES MOORE has resigned his situation as chief operator in the Western Union office of Mobile, Ala., to take a position in the Corinne, Utah, office.

Mr. SAMUEL WEEKS has been appointed, by Mayor Flanders, Superintendent of the Fire Alarm and Police Telegraph at New Orleans.

Mr. CHARLES A. ADAMS has been appointed Assistant Superintendent of the Fire Alarm and Police Telegraph at New Orleans.

Messrs. T. J. RODGERS, HENRY STODDER and F. WELSHAUS are Fire Alarm and Police Telegraph operators at New Orleans, La.

THE TELEGRAPH.

Monthly Statement, Western Union Telegraph Company.

FEBRUARY.

	1869.	1870.
Receipts.....	\$575,249 07	\$521,416 59
Expenses.....	354,855 72	380,780 20
	\$220,393 35	\$140,636 39

The Pacific Submarine Telegraph Company.—A Land Subsidy Wanted.

THE following are the details of the act to incorporate the Pacific Submarine Telegraph Company, and to facilitate telegraphic communication between America and Asia, upon which Mr. Cyrus W. Field is seeking favorable Congressional action:

The bill proposes that Congress shall incorporate a company possessing a capital of ten million dollars in gold, the entire amount to be subscribed and paid in within one year from the organization of the company under the act of incorporation, which shall have power to construct an ocean cable between California and

Japan and China, either direct or by the way of the Hawaiian Islands, or some other island or islands of the Pacific Ocean. It further provides that, upon the completion of the cable within five years from its organization under the act of incorporation, and not otherwise, the company shall receive — acres of the public lands by the location of scrip, to be issued under the direction of the Secretary of the Interior after the whole amount of the capital shall have been paid. It declares that this grant shall be made upon the fundamental condition that the company shall complete the cable within five years from the date of its organization under the statute. It also proposes that authority shall be given for the employment of one or more vessels of the navy to make the necessary surveys and sounding of the ocean and coasts, in and over which the cable is to pass, and to assist in laying the same. As a pledge and guarantee for the good faith with which the enterprise is undertaken by the company, it requires that a deposit shall be made with the Secretary of the Treasury of United States of bonds to the amount of \$100,000, to be returned to the company if the cable shall be completed and placed in working order within the time prescribed, and to be forfeited to the United States upon the failure of the company to construct the cable within that period. The proposed act also declares that the United States shall have priority over all other nations, and over all corporations and private persons, in the transmission of messages from this country to any foreign country through the cable, and priority over all corporations and private individuals in the transmission of messages from abroad to this country. The right is also conferred upon the United States to transmit annually, free of charge, over the line of telegraph, messages on Government business not exceeding, at the regular tariff rate, \$500,000 in any one year.

FOREIGN TELEGRAPHIC NOTES.

THE *Court Journal* (London) states that the Queen has had a telegraph wire connected with Windsor Castle, and a few days since Her Majesty sent a message to Prince Arthur, and went for a walk on the slopes. There was an answer on the Queen's return. Of course all messages give place to the royal cipher, yet it was a quick reply.

The steamship "Edinburgh," the property of Messrs. Edward Bates & Sons, has just been fitted by Messrs. Laird Brothers, at their works, Birkenhead, for the service of the Telegraph Construction and Maintenance Company. Her dimensions are 290 feet long, 39 feet wide and 26 feet deep; tonnage, 2,200 tons. She is now arranged with three large cable tanks; two of them being 32 feet in diameter by 22 feet deep, and the third 26 feet in diameter by 20 feet deep. Under the two largest of them there has been fitted an inner skin, forming a double bottom, for stowage of water ballast when the weight in the cable tanks has run out. There are also various other fittings and appliances, specially arranged for the telegraph work.

Telegraphic communication with India is now so far perfect that electricity now outstrips the course of the sun, as it frequently happens that messages transmitted from Calcutta at noon, to London, are delivered by the Indo-European Telegraph Company at 10.30 A. M. The communication between London and Teheran (the terminus of the Indian Government lines) is actually instantaneous.

The *Mechanics' Magazine* (London) says: "We are requested by Sir Francis Ronalds to state that, although he invented and employed a perfectly efficient electric telegraph in 1816, and fully described it in 1823, he disclaims the appellation of 'original inventor of the electric telegraph,' many schemes of the kind having preceded his." The motive for Her Majesty's gracious act, on the 31st ult., has been very appropriately designated by the Prime Minister an "acknowledgment of his early and remarkable labors in telegraphic investigations."

The telegraphic line between Valparaiso and Buenos Ayres, across the Andes, will soon be erected. Messrs. Clark & Co., of Valparaiso, have succeeded in arranging this most important enterprise; the first portion of the line is now being shipped in London for Rosario. As the Panama, West India and Pacific line will be extended to Peru, this will be united with the Transandine line from Valparaiso, and as the Argentine and Brazilian Governments have granted a concession for another cable, to be laid from the coast of Brazil to the West Indies, there will be in a short time a direct communication with the whole of South America by two lines. The telegraph between Valparaiso and Buenos Ayres will be constructed entirely with iron poles and the best materials that can be obtained in England. The Argentine Government has granted a subsidy to this telegraph company of £6,000 a year, and that of Chili will add at least £2,000 more.

Testimonial to Prof. Morse.

WE learn that an organization has been effected, among the officials of the Western Union Telegraph Company, to procure and present to Prof. S. F. B. MORSE some suitable testimonial, to testify the veneration and respect entertained for him by the operators and others connected with the Western Union lines, in which he is largely interested. Mr. JAMES D. REID is chairman, Mr. JOHN HORNER Treasurer, and Mr. ROBERT B. HOOVER Secretary of this organization.

It has not yet been determined what form this testimonial shall take, and it will depend upon the amount contributed therefor.

Explanatory.

SOME exceptions having been taken by the friends of Miss SNOW, and the General Superintendent of the Eastern Division of the Western Union Telegraph lines, to the language used in an editorial entitled "Mother SNOW'S Victims," in our last issue, we would say that we referred to them only as officers of the Western Union Company, and presume it was generally so understood. We do not desire or intend to do an injustice in the columns of this paper, even to parties so little entitled to consideration as those referred to, and we therefore voluntarily and cheerfully make this explanation to prevent any possible misconstruction of our meaning.

Let not Your Angry Passions Rise.

WE have the particulars of a recent "onpleasantness" between two high officials of a mammoth telegraph company, of a very interesting character. The immediate results were not serious, but for the timely intervention of a bystander they might have been so. Old friends alienated, it is well known, make the bitterest enemies, and this case is no exception to the rule. We have not as yet decided whether to supply the details of this affair to the public, with the names, etc., although neither of the parties have any claims upon our forbearance. Coffee for two—pistol for one. *Nous verrons.*

Modern Practice of the Electric Telegraph.

THE third edition of Mr. POPE's work, the *Modern Practice of the Electric Telegraph*, published by Mr. D. VAN NOSTRAND, is being rapidly disposed of, and a fourth edition will soon be required. This book supplies a want which had long been felt by the telegraphic fraternity, and its reception and rapid and extensive sale shows that it has met with the appreciation due to it.

Persons desiring agencies to sell this popular and valuable work can make favorable arrangements by addressing Mr. VAN NOSTRAND. Copies will be forwarded, postpaid, by the Editor of THE TELEGRAPHER, on the receipt of the price, \$1.50.

New Patents.

For the week ending April 12, and bearing that date.

No. 101,900.—TELEGRAPH APPARATUS.—Bernard Meyers, Paris, France.

Claim.—1. The revolving spiral blade, in combination with the message holding cylinder and tracer, substantially as and for the purpose described.

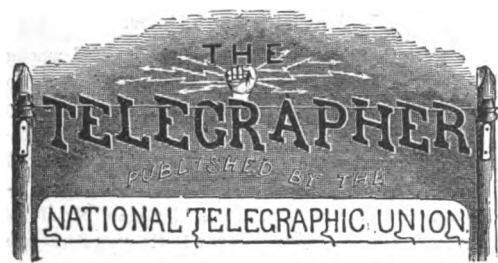
2. The combination of the straight electro-magnet, the permanent magnet, the paper supporting lever, and the spiral blade, substantially as and for the purpose described.

Recent British Patents.

SPECIFICATIONS.

No. 2,712.—A. Collingridge, Moorgate, E. C. LAYING SUBMARINE CABLES. Dated September 17, 1869.

The inventor winds the cable upon one or more drums or reels, each of which is mounted to rotate on a horizontal axis, working in suitable bearings. The drum or drums he places in a "well," formed within the vessel intended to lay the cable, and open to the water at the bottom, similar to that of a "well ship," so that the drum or drums upon which the cable is wound shall be wholly or partly immersed in the water, which is free to enter the well. The cable being thus wound on a drum or drums, capable of being rotated, may be paid out as required, by means of the usual machinery now employed for that purpose, without any liability to kinks, consequent on the twisting of the cable when paid out from stationary coils contained in tanks, in the usual way. *Patent completed.*



SATURDAY, APRIL 23, 1870.

J. N. ASHLEY.....Publisher and Editor.

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THE PROPOSED PACIFIC SUBMARINE TELE-
GRAPH.

THE memorial of Mr CYRUS W. FIELD to Congress, and the act accompanying it, relative to a proposed Pacific submarine telegraph, to establish and facilitate telegraphic communication between America and Asia, are the inception of an enterprise of great value and importance. We publish on another page an abstract of the provisions of the bill, and but for want of room would publish this week the memorial in full. As it is, we must content ourselves with making such extracts as will give an idea of its interest and importance. Mr. FIELD represents:

"That having been connected with the successful establishment of inter-oceanic telegraphic communication across the Atlantic, between America and Europe, he is now desirous to undertake the accomplishment of a similar enterprise across the Pacific, between America and Asia.

"It is not necessary at this day to enter into any argument in favor of the national and international importance of such an enterprise. It is sufficient to say that its successful accomplishment will supply the only link now remaining to be completed in order to make, in connection with lines now in operation and under contract, a chain of telegraphic communication around the globe."

Mr. FIELD then proceeds to mention the difficulties attending the execution of such a project, by private instrumentalities alone, without Government assistance and support, and cites the instances in which Congress has heretofore extended aid to telegraphic enterprises of great national and international importance. He asks that assistance, in the shape of a grant of land, *operative only upon the actual construction and operation of the proposed line*, commensurate with the magnitude of the work and the great difficulties attending its successful completion, may be afforded by Congress.

He subjoins a list of sixty-four submarine cables now in operation, aggregating twenty-two thousand miles in length, and states that more than twenty thousand miles additional are now actually under contract. He further says:

"It is not doubted by your memorialist that, if the Government extends its aid to the enterprise, an oceanic cable will be successfully laid within five years, between the United States and the continent of Asia. The assistance which your memorialist deems essential for the accomplishment of the enterprise is embodied in the bill he now respectfully submits to the consideration of Congress."

This is truly a magnificent enterprise, and one which we hope will meet with favorable consideration from Congress. Upon general principles we are opposed to Government subsidies to private enterprises, but this should be, in our opinion, made exceptional in that respect. As Mr. FIELD very forcibly states, any argument

in favor of the national and international importance of the undertaking is unnecessary. The importance and advantages of the proposed line to the United States and to the World are apparent. When it is in operation the telegraphic girdle round the earth will be completed. Its effects upon our commerce with China, Japan, and other Eastern countries, cannot now be truly estimated. It involves the investment of a great amount of capital, and capitalists cannot be expected to incur the necessary risks without extra inducements therefor. No loan or subsidy is asked for from the Government, or guaranty of revenue. We presume that a liberal grant of public land is expected, but this, as we have before stated, only becomes operative upon the successful completion of the enterprise. We are pleased to hear that Congress is favorably disposed towards it, and that the bill will probably pass both Houses with but little if any opposition.

With the passage of the act of incorporation the real labors of Mr. FIELD and his associates will commence. Hitherto American capitalists have looked coldly upon submarine telegraph enterprises. When the first ocean cable was laid its projectors, and those who had invested in the enterprise, were regarded as little better than lunatics; and this old prejudice has heretofore prevented the investment of any considerable amount of American capital in this all important department of telegraphy.

Experience has demonstrated the success and profitable character of submarine telegraphs. The capitalists of Great Britain have eagerly seized upon this mode of investment, and, as a consequence, nearly all the submarine telegraphs of the world, including both the Atlantic and French cables, are mainly owned and controlled by them. All the new lines now being laid, and for which cables are being constructed, are also paid for with British capital.

It is earnestly desired by Mr. FIELD and his associates that this important link in the telegraph connections of the world should be owned and controlled by Americans. That when established the enterprise will prove a profitable one there is no doubt. That Congress will act liberally in the premises is probable, we may say almost assured. That we should at least control this section of the great telegraphic circuits of the world will, we think, be readily conceded. National pride and patriotism, as well as self interest, should insure a general and generous response to the appeal for subscription to this stock. An earnest effort will, we understand, be made to secure the necessary means for the construction of the line in this country. If offered to European capitalists the whole could be easily disposed of in sixty days. If our men of wealth, and those who have funds to invest, will look upon this enterprise favorably, then we shall be relieved from the reproach of neither owning or controlling any part of the international telegraph system. To our own country will inure the honor and profit of this great enterprise. If the same apathy prevails in this as has heretofore in other similar enterprises, we must be content to see the more enterprising European capitalists again secure the credit and profit which should legitimately be ours.

We shall watch with much interest the progress of this scheme, and hope that we may be enabled at no distant day to record its success, and show to the world that the citizens of this great country are no longer disposed, by indifference and lack of appreciation of their real merits, to permit the absorption by European capitalists of the honor and profit which result from great international ocean telegraph lines.

The New Fire Alarm Telegraph.

THE detailed account of the new Fire Alarm Telegraph for this city, which we commence this week, will be found very interesting. Electricity has proved of the greatest and most indispensable importance in notifying the breaking out of fires, and thereby saving endangered property, which, under the old system, would inevitably be destroyed.

New York, as the metropolis of the country, and which, from its restricted territory and consequent compactness and value of its buildings, is peculiarly subject to destructive conflagrations, certainly should have the most perfect Fire Alarm Telegraph that could be constructed. The old system, although very well in its day, had outgrown its usefulness, and was inadequate to the necessities, present and prospective, of the city. It was wisely decided to lay it aside, and have devised and constructed an entirely new system, not only adequate to present requirements but capable of expansion, to meet future needs. The contract was awarded to Messrs. C. T. & J. N. CHESTER, and they have devoted time, skill and money to the creation of a system of Fire Telegraph which should be a credit to the city and to the contractors. That they have fully succeeded an inspection of the new system will satisfy any one. They have reason to be proud of this work, to which they have devoted the resources of their establishment for months past.

The American Fire Alarm system, undoubtedly the best in existence, has been modified and adapted to the peculiar requirements of the department here, and has been splendidly elaborated. As a whole, our new Fire Alarm may be justly regarded with pride and satisfaction. No expense has been spared by the CHESTERS to make the machinery and instruments the best of their kind.

The room allotted to the Fire Telegraph at headquarters is utterly inadequate for the purpose, and whatever may be the trouble and cost of removal the Fire Commissioners should without delay provide more suitable accommodations. While Superintendent CHAPIN and his assistants make the best use possible of their present narrow and restricted accommodations, they cannot work as efficiently as they might do were they located, as they should be, in spacious and convenient quarters.

Removal of Bliss, Tillotson & Co., Chicago, Ill.

BLISS, TILLOTSON & Co., of Chicago, have been compelled, by the inadequate accommodations at their former location, No. 171 South Clark street, Chicago, Ill., for their extensive and rapidly increasing business, to seek more commodious quarters. They have accordingly leased four floors of the large brick building, No. 247 South Water street, opposite the Lumber Dealers' Exchange, to which they have removed, and where, hereafter, they may be found by their numerous customers and friends. As our readers are aware, this is a branch of the old established and enterprising firm of L. G. TILLOTSON & Co., of this city, and is characterized by all the liberality and energy for which the latter is so well known. By the excellence of their manufactures and materials, and their reliability and strict attention to their business, this firm has secured a standing and reputation not only creditable to them but highly advantageous and profitable. May they live long and prosper, as they so well deserve to do.

Reduction on Wire.

As will be seen by an advertisement of L. G. TILLOTSON & Co., owing to the decline in gold and other circumstances, they are supplying their superior quality of galvanized wires at prices much below former rates. Over 6,000 miles of this wire has been sold by this enterprising firm during the last eight months, and it has afforded complete satisfaction to the purchasers. No firm in the business excels that of TILLOTSON & Co. in the excellence of the telegraph material and instruments manufactured or sold. Doubtless the reduction on wire announced by them will induce those having occasion to purchase to examine their stock before supplying themselves.

On January 1st, 1869, there were in Holland 1,578 miles of Government telegraph lines, and 5,294 miles of wire. Of these rather more than one half were laid along the railways, and the balance along the public ways, canals, etc. There were 90 Government telegraph stations open, and 108 others—making 198 in all.

GREAT REDUCTION IN PRICES OF TELEGRAPH WIRE!

Owing to the decline in gold, and other circumstances, we are now supplying our superior quality of

GALVANIZED WIRE

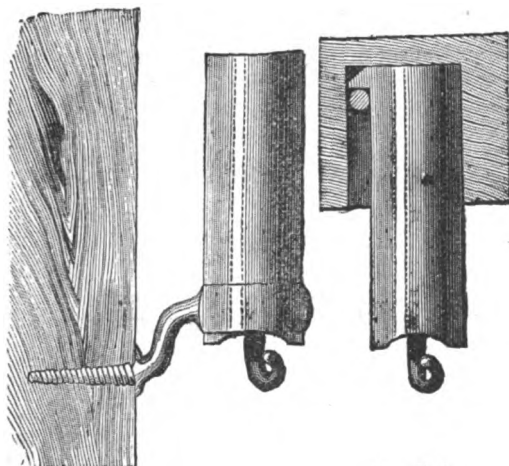
at prices much below former rates. Parties desiring the Best Wire at the Lowest Price should call upon us. Having sold over 6,000 miles of this Wire during the past eight months, to the satisfaction of the parties purchasing, we know whereof we are speaking.

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THE BROOKS INSULATOR, with the PATENT COMPOUND WIRE and our PATENT MAGNETS, constitute the best Telegraph Lines ever constructed.

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PREMIUMS! PREMIUMS!! FOR THE SPRING OF 1870, TO THE FRIENDS AND SUPPORTERS OF "THE TELEGRAPHER."

It has been the custom of the present publisher and editor of "THE TELEGRAPHER" to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES AND INJUSTICE practised by them upon its employees, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

The President of that Company, however, distinctly disavows this action, and says, in a communication to the editor of THE TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S) 'discontinuance and discountenance' a test of competency for our service."

It will be seen, therefore, that this movement is one incited on the part of certain of the subordinate officials of that Company by personal spite and chagrin, because the paper has remained UNSWERVINGLY FAITHFUL to the interests of the Practical Telegraphers of the country, and could not be used for the personal ends of these disgruntled officials.

It remains to be seen whether the Practical Telegraphers of this country CAN BE RELIED UPON to stand by those who seek to secure to them JUSTICE AND FAIR TREATMENT.

In addition to the inducement offered above to exertions in support of the paper, we offer the following

LIBERAL PREMIUMS FOR NEW SUBSCRIBERS.

This offer will be good until May 31st, 1870.

For TWENTY-FIVE SUBSCRIBERS we will give to the person sending the names and money a

NO. 1 BOX RELAY (WARRANTED).

For TWENTY SUBSCRIBERS a No. 1 TELEGRAPH KEY, either Caton or Self-Closing, as may be preferred, and a copy, either of "Modern Practice of the Electric Telegraph" or "Sabine's Electric Telegraph."

For FIFTEEN SUBSCRIBERS a No. 1 TELEGRAPH KEY, any pattern that may be desired.

For TEN SUBSCRIBERS, the Fourth Edition of "Cully's Handbook of Practical Telegraphy."

For SIX SUBSCRIBERS, "Noad's Inductorium" and "Sabine's Electric Telegraph."

For THREE SUBSCRIBERS, F. L. POPE'S "Modern Practice of the Electric Telegraph."

In addition to the above, we will give to the person who shall, on or before the 31st of May, send us THE LARGEST LIST OF SUBSCRIBERS, not less than FIFTY,

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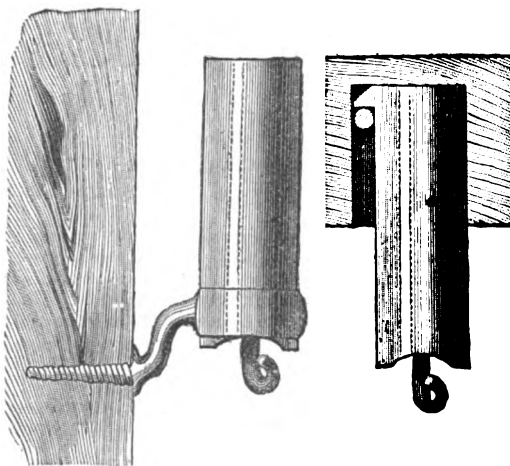
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FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionally stronger magnet, while the resistance will be the same. He is also manufacturing the

IMPROVED BUTTON REPEATER,

the cheapest, most reliable and simple repeater as yet invented

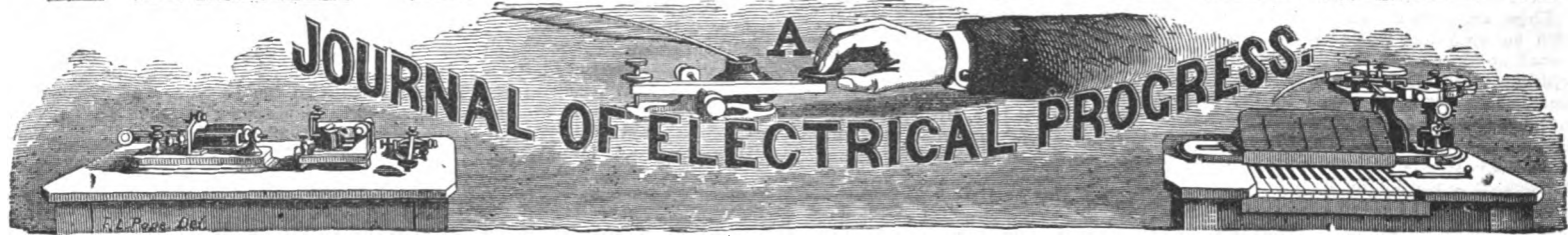
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All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package. He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

100

THE TELEGRAPHER.



Vol. VI.—No. 36.

New York, Saturday, April 30, 1870.

Whole No. 198.

THE NEW YORK CITY FIRE ALARM TELEGRAPH.

(Concluded.)

In direct connection with this register and its supplementary apparatus, through the medium of the wires, are

THE STREET BOXES.

These boxes form a very important part of the apparatus of the system. They are fastened to the poles or engine houses, and consist of an outer casing or house of iron, with the seal of the Metropolitan Fire Department on each, and a label covered with glass, indicating to the public where the key, which opens the box, may be found. Every policeman is also furnished with a key, and every fireman, and the insurance patrol. When a fire occurs in the neighborhood of a box any one who first obtains the key opens the outer box. Within it he perceives a second iron box, and fastened to it a handle to be pulled down. Printed directions are also visible, to guide in doing this simple thing in the right way, and also showing how it may be known that pulling the handle has been effective. The moment the opener of the box hears a response he knows that his work is done. Within the outer box is an inner box, to which the handle is attached. This box opens with a separate key, which is accessible only to the officers of the Fire Department. Upon opening the inner box a third box is seen, round, and tightly closed up from the air; on the outside of this third box is to be seen simply a brass arm, extending out to the right. This brass arm is fastened to the apparatus within the round box. The office of the pulling down handle on the second box is to engage with and pull down this brass arm.

Within the round box is a train of clock-work, driven by a spring, which is so attached outside of the frame that if it break another can be supplied without pulling the frame to pieces. The arm winds up the machine like a watch, but only a short distance. It begins to run down, and in doing so the movement is controlled by a regulator. One of the wheels of the train carries a "circuit wheel," with teeth cut on it corresponding with the particular number signal which the iron box represents. The office of the regulated clock-work is to carry this circuit wheel very steadily and slowly around from one to five times, as it is set. Each time it revolves its teeth strike upon springs, and the circuit is made to open and close correspondingly. Two teeth—a space—then three teeth and another space, and then four teeth and a long space, would cause the circuit to be opened and closed, so as to ring out the number 234. As every box has a circuit wheel with a different number, the starting of the machine of any box communicates its special number with certainty, five times repeated, to the central office, and it is printed on the paper of the register five times. In addition to this machine the second box contains a magnetic bell, which rings in accordance with the signal sent, and thus becomes an indicator that the message is going correctly to the central office; it also receives the return signal from the central office, and any and every desired signal which is sent out from that place.

There is also a telegraph key, by which messages may, if necessary, be sent; a lightning arrester and a switch, which, turned either right or left, connects the line to a ground wire. By this means, if the line becomes broken, it may be grounded at the two adjacent boxes, and worked through as if complete.

The other principal receiving instruments in the office consist of two extra and ordinary registers, by which the communications with the boxes which may be necessary for keeping the lines in perfect repair and good order are carried on, so as not to allow the main register to be cumbered by them. The apparatus for sending out the fire signals, received from and through the machines just de-

scribed, consists of the repeater, the supplementary repeater, and the mechanical gong strikers.

THE REPEATER

is an instrument of great perfection of workmanship and design. It has a very important and extensive work to perform. When it is necessary to send out alarms, it is, of course, of first importance to send to the various engine houses, and next to the street boxes. The last signals would be only for the information of the public. The circuit wheel, driven by regulated clock-work, is here again employed, but it is constructed far differently from that used in the street boxes. In this case each revolution of the circuit wheel is made to throw a single signal. In other words, three revolutions will produce three taps of the bells. These signals are usually sent out with a very large battery power. It would be expensive to keep up so large a battery power upon every line as is usually thought best to employ for this tapping, so the circuit wheel is made very broad on the face, and teeth faced with thick platina are placed spirally upon it, and double springs, also heavily armed with platina, are placed so that the teeth come successively up to the springs and throw the battery power into them. Practically the division is into eight sets of springs and eight sets of teeth on each wheel or roller. As the circuit wheel or roller revolves it communicates successively the battery power into the springs 1 2 3 4 5 6 7 8, and as these springs unite with the lines the power is successively thrown into the eight successive lines. The full power of one large battery is thus brought to bear successively on the different lines in order, and a sufficient number of these circuit wheels, with their springs, are coupled together by gearing, so that all the lines through the city may be charged every revolution. How many of these lines shall be charged is entirely under control. The switch board allows the operator to throw any number on or off the repeater. The circuit wheels are driven by clock-work and weight, and as long as the machine is made to run the wheels would go on to tap regular successive strokes on the bells through the city. But the requirements of the fire service are such that numerical signals from 1 to 998 may be sent out. Any such signal may be sent by the machine—provided that a plan for cutting off the currents from the rollers or circuit wheels, at regular intervals, be provided. Thus, if we wish to send the signal 23, we allow the circuit wheels, in full battery connection, to revolve twice, all the bells on all the lines will tap twice, but as they revolve the third time the battery connection is severed from them, and they revolve inoperative. As they make their fourth revolution the battery power is again turned on and three revolutions are made, giving three more taps. At the conclusion of the third tap the battery power is again cut off, and remains cut off until it is time to commence a second "round," then the same process is repeated. The cutting off and throwing on of the battery is accomplished by the use of regulating wheels—each one cut to make the different desired signals. These wheels have teeth on them. They can be attached to or detached from the repeater with ease and rapidity. Each tooth passes a certain point in the same space of time occupied by one revolution of the circuit wheels. The agency of the teeth is to press certain springs together firmly. The springs being fixed, and the wheels revolving, if the first and second tooth of the wheel touch the springs and press them together, the battery power flies to the circuit wheel. If, however, the next tooth is missing, the springs do not come in contact and the battery is cut off; what signal shall be sent is, therefore, simply a question of how many teeth are left upon the regulating wheels, and in what order they occur. While regulating wheel 3 2 7 is attached to the repeater the instrument cannot send any other signal—it is impossible to make any mistake. But a difficulty presents itself in carrying out this system of automatic telegraphy. The

relation of revolution of the two wheels, that is the regulating and the circuit wheel, must be fixed; in order to send 998 the revolutions must be as 1 to 30, as 30 teeth would be required to send all those 26 taps and the pauses between. It is quite evident, then, that the pause between the completed signal 23 and its repetition is much greater than between 998 and its repetition. It is desirable to have the pauses between rounds equal, and to be able to adjust it to a certain number of seconds. This is accomplished thus: Instantly after the last stroke of every signal a pin on the regulating wheel actuates a lever which immediately increases the speed of the train, which speed is kept up until the machine stops itself precisely at the point on the regulating wheel where it commenced its action. At the same instant that the speed is increased another train of wheels is started into action, which runs for a certain regulated interval of time and then stops itself, but before stopping itself it restores the parts of the other train to the condition they were before the speed was increased, so that when again it starts it is upon the normal slow speed. The further office of this second train is, just as it is about to complete its action, to start again the first train, so that the complete signal is repeated. Now, as the second train is not tripped until the last working tooth of the regulating wheel acts, the regulating or second train goes into action much sooner on a short signal than on a long one—so that the first train cannot go into action again till the second train stops; so that the effect is, after a short signal, the first train is tripped and started again almost immediately after it comes to rest; but after a long signal it has to wait until nearly the whole time occupied by the movement of the second train, and thus the pause is completely equalized. These actions of the two trains upon each other continues, and the signals are repeated with great accuracy and uniformity as long as the trains continue running, but is arranged that after a certain interval the movement shall lock itself into rest, so that nothing can again call it into action except the will of the attendant. The locking arrangement is contrived so that it can be set to any number of rounds or repetitions of signals required by the department.

The object, then, of the repeater machinery, is to send to any number of stations a mechanically correct numerical signal, to repeat it, whether short or long, at regularly timed and equal intervals, and to repeat it as many times as required. This machine does this, requiring that the attendant should perform only two simple operations: First, the attachment of the proper signal wheel; second, the starting of the instrument.

No further attention is required; the operator has his mind relieved from responsibility; he may receive a second alarm or attend to other instruments.

Before giving up this instrument to the charge of the Fire Department, it was tested with as much work as would ordinarily be given to it during eighteen months' service. Supplementary to this elaborate instrument is a smaller one, for sending any other signals outside of the numerical alarms, such as time signals, or any general orders that are to be sent to engine houses, which can be expressed numerically. It is also ready for use in any emergency which might prevent the use of the larger instrument. All such instruments depend for closing of circuits upon springs, which press upon toothed rollers. In these machines these rubbing connections are armed with thick pieces of platina, very accurately fitted. The springs are double, either one of the two being competent for the work. The apparatus is closely boxed up in plate glass cases, yet as particles of dust will sometimes get into even such cases, and a chance exists of lessening the perfection of this circuit closing, a test machine is added, whereby the exact condition of any spring throughout the apparatus can be ascertained at any time. The entire number of 108 springs can, if desired, be tested within ten seconds. To receive the alarms thus sent out

by the repeaters, machines are set up in the engine houses and other stations, called

MECHANICAL GONG STRIKERS.

These are large gongs, struck with a hammer, moved with an apparatus which is driven by a weight, and wound up like a clock. A delicate trigger is combined with this mechanism, which is capable of very fine adjustment. This trigger is pulled by the magnet and the machine released, and one blow struck. The object of the machine is to give a more or less powerful blow, proportioned to the size of the bell, which may weigh from five pounds to ten thousand.

Such are the principal machines used in the fire telegraph, but it is proposed to supplement them with a few circuits independent of the fire lines, which may connect all alarm stations or officers' quarters with the central office, so that special orders, directions for repairs, investigation of difficulties and general discipline, may be easily managed without breaking into the fire telegraph lines, which are thus left exclusively for alarms; for, although each station may be made a complete telegraph office in emergencies, with the facilities provided, it should be used only by the electric corps of management and not by the department generally.

The system above described is that known as the American Fire Alarm Telegraph, originally devised by Channing & Farmer, and first put in operation in Boston many years since. It has been adopted in nearly every city of importance in the United States and Canada. The patents covering the system, some twenty in number, are now owned by John M. Gamewell & Co., of 104 Centre street, in this city.

The contractors for the construction of the system were C. T. & J. N. Chester, of this city; and the many modifications and additions required to adapt it to the wants of a metropolis like New York were designed and made by them. Some of these adaptations exhibit the utmost ingenuity, and the manner in which the apparatus has been constructed reflects the highest credit upon the makers. It is of the most elegant design and workmanship in every particular.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

A Prosperous Telegraph Season.—Interesting Telegraphic Information.

NEW ORLEANS, LA., April 13.

TO THE EDITOR OF THE TELEGRAPHER.

As the business season of this part of the county is now drawing to a close, the files of telegraphing show a corresponding falling off, and the boys who have worked hard all the winter now get an occasional chance to get out of their chairs and stretch their pedestals by way of exercise.

The past season, from a telegraphic point of view, has probably been the most profitable one that the Western Union Company has ever experienced in this section. The cable business, especially, reached a higher point than even the most sanguine expected. In fact, as the tariff to Liverpool, London, Havre, and several other important European ports is only about nine dollars (gold), many merchants can now afford to use the cable who formerly could not.

Another point, too, in regard to the increase of business is, that business men are generally using "codes" or ciphers by which, without greatly (if at all) increasing the expense, they can transmit from four to ten times the amount of business according to the perfection of their arrangement. Nearly all telegrams sent by large dealers and brokers are in cipher. The business community have probably recognized the fact that it will be some time to come before telegraph rates will be reduced to the minimum. Meantime, they can make a long step in that direction by condensing their commercial phraseology into codes.

The prospects are that next season will be much heavier than the one now closing. Last fall a new wire was put in exclusively for New York. Previous to that time, New York and Washington business has been done on one wire, together with the Southern press, which latter was rather brief. In spite of this additional wire much business had to be sent via other routes. We shall need another line by next September. A new "string" to St. Louis, was also put in and has proven a great help.

The N. Y. line, as it runs, is between sixteen and eighteen hundred miles in length, yet, when there is no unusual trouble, can be worked as fast and as well as a circuit of two hundred miles. It has commonly but two repeaters—one at Rome, Ga., and one at Lynchburg, Va.

The great extent of territory through which it runs gives rise to some curious features. At the northern extremity, and for some distance down, it may be freezing, snowing, and blowing furiously. In Tennessee or Alabama there may be a heavy thunderstorm, and at the southern end we may be enjoying a fine balmy day, with the trees and flowers blooming, and sherry cobblers in good demand.

Last fall, for the first time, a city wire was constructed, and a number of branch offices opened. The principal one is located where the main office should be, on Carondelet street, right in the centre of the heavy business section. Of this branch Con. Dwyer, so well known among telegraphers, is the presiding genius. Upon his arrival from New York he seemed to take to the place naturally, and within a few weeks was as old a resident as if he had been born in Louisiana. I believe he enjoys the respect and good will of all who know him.

THE OPPOSITION LINES

have not reached this place. At present they terminate at Memphis, and I do not know whether they are building South. No doubt the strong competition of the Western Union Company, and its uncompromising hostility, has somewhat crippled them, while the uncertainty as to what would be done in the Postal Telegraph question has probably had its due weight in the matter. However, we hope to see them here before long. It would certainly be a great mistake to build within a few hundred miles of the metropolis of the South and there stop.

Several large railroads are building in this part. One from Mobile here, and thence to Chattanooga. This road also builds a branch to Texas. Then there is the Southern Pacific, starting from Shreveport via Brazos, Texas, for California. All these roads will, of course, have wires, and telegraph companies may build alongside in course of time.

As I close everything is going along smoothly. Affairs generally are in a satisfactory condition.

PICKWICK.

Congress and the Telegraph.

WASHINGTON, D. C., April 27th.

TO THE EDITOR OF THE TELEGRAPHER.

THERE has been little done, either in Congress or by the Committees, relative to telegraph matters, of importance or interest. Both Houses have been too fully occupied with other matters to pay much attention to telegraph affairs.

On Monday last, in the House, Mr. Farnsworth introduced a bill to charter the American and Holland Ocean Cable Company, which was referred. This is Colorado Jewett's scheme for the Government to pay in bonds for the laying of a cable, and present it to him and his associates.

The House Select Committee on the telegraph held a meeting to-day, at which Mr. Gardiner Hubbard appeared and made an argument in favor of his scheme for a private telegraph monopoly, to be connected with the Post-office Department. He advanced no new ideas or arguments, and the readers of THE TELEGRAPHER are already familiar with his views. The Committee will not report in favor of his scheme, but probably favor substantially Mr. Washburn's plan for a Government telegraph.

Mr. Orton, the President of the Western Union Telegraph Company, has been notified that if he desires to address the Committee an opportunity will be afforded him.

Mr. Cyrus W. Field arrived here this morning, to look after Pacific Submarine Telegraph matters. Mr. Field is working at this as energetically as he did at the Atlantic Cable in its dark days, when anticipations of success seemed to most men chimerical. That he will succeed in this also he has the firmest confidence, which is shared by the public generally. As yet but little if any opposition to it has been developed. The only possible objection is on the ground of the subsidy asked for; but in addition to the peculiar claims which this project has upon the country for aid and encouragement, it will be seen that, in consideration of the desired subsidy the Government is to have the right to send yearly, free of charge, despatches on which the tolls will amount to half a million of dollars, at cost prices. This is a most liberal proposition on the part of the company, it is to be feared perhaps more liberal than it should be. CAPITOL.

Telegraph Affairs and Telegraphers in Cincinnati.

CINCINNATI, April 17th.

TO THE EDITOR OF THE TELEGRAPHER.

IN picking up a stray number of the "official organ" the other day (which I need scarcely add had been sent here gratuitously for the special benefit of the great Moguls of the grant monopoly, so that they might peruse the interesting (?) matter contained therein, namely, tariff changes,

general orders, &c.), I noticed a list of the operators on the Central Division who had been excommunicated, and was pleased to see that the majority of them were the flower of the Western Union ranks, and whose names are

"Familiar in their mouths as household words."

and one reason why I write you is to call on the "old timers" to let the fraternity know through the columns of THE TELEGRAPHER what has become of all the old men, and whether they have managed to make a living without the patronage of the Western Union Telegraph Company. As regards Cincinnati, and the men who are "discharged" (after having quit work of their own accord), we are happy to state that after a vacation of two weeks there was not one of them unemployed, and, for the benefit of the profession at large, we will endeavor to give the present whereabouts of all the Loyal Leaguers who stuck to the colors of Circuit Number Twenty till they were informed, from official sources, that labor had to surrender to capital. Glass is Manager of the Great Western office at Davenport, Iowa; Weitbre is employed on the Pittsburg Commercial; Newton Foster is working for the "Short Line" Railroad Company at Louisville; M. L. Lawson is with the A. & P. Co., in this city; J. T. Trimble is running the Covington office of the P. & A. Co.; A. C. Lewis, F. B. Goodrich, C. L. Webb, D. W. Bush, C. N. Scott and W. M. Spink are working in the P. & A. office in Cincinnati; and the latter, as well as Geo. Scutchell, another striker, are employed on the local staff of the Cincinnati Chronicle, of which King, an old and well known Cincinnati telegrapher, as well as Leaguer, is local editor. Geo. Clark, Geo. Everitt, J. D. Thurston, D. Moore, Richard Lane Charles Selden, J. B. Watt and O. K. Newton were taken back by the W. U. Company after the little difficulty was finally settled. These, with the five "rats," whose names it is unnecessary to give, as they were published in the Enquirer at the time they perjured themselves, constituted about the entire force of the office at the time of the strike.

If affairs anterior to the little "onpleasantness" were anything but agreeable for telegraphers, there is assuredly no improvement now; but instead of that, the monopoly officials having come out first best in the strike, merely through the desertion of weak kneed cowards, are now on their "high horse," and show their employees but little mercy. Salaries have been cut down to sixty and seventy dollars per month, and the night men have to do day duty also. Men are docked for being absent, while extra work is paid for in extra insults. Operators are abject slaves, and the only hand that intervenes between them and the whipping post is THE TELEGRAPHER; through the columns of which, if their wrongs cannot be righted, they can at least be made public.

The A. & P. Co. extended their lines to this city about two weeks ago, and the manager here is a very clever young fellow, named McNamara, a Cleveland striker, we believe.

The base ball fever among telegraphers here is as hot as ever, and the Night Owls are organizing their nine for the third season. The P. & A. boys are also organizing a club, and as Webb, Scott, Gilliland, Selden and Spink, of last year's Night Owl team, are among them, should they condescend to play with those who went back on the League, which is not at all probable, they will doubtless give them a hard tug for the supremacy.

Trusting that THE TELEGRAPHER is doing as well as in years gone by, and that the fraternity will endeavor by liberally subscribing for the paper to defeat the efforts of such self made men as Eckert, Stager & Co. to defeat it (as shown by Jacobs), I am sincerely the paper's friend. HADACONA.

Indiscreet Friends.—Some Plain Facts.

NEW YORK, April 25th.

TO THE EDITOR OF THE TELEGRAPHER.

THE "friends" of the Manageress of the City Department and the General Superintendent of the Eastern Division are shocked at your lack of respect for these dignitaries, are they? Please assure them you are not alone in the "lack." If they are displeased at legitimate effects let them attend to the causes; or, to speak plainly, let these friends bend their friendship and influence toward inducing its dignitaries aforesaid to render themselves a little less ridiculous and a little less contemptible. If the General Superintendent will persist in trying to sugar-coat the petty tyranny of the Manageress, by calling it "motherly kindness," his friends must submit to have him laughed at for his pains. We have heard children told that bitter medicine was sweet, but no one ever knew it to taste sweet for the telling. Grown up young ladies know the difference between "motherly kindness" and vindictive spite, and don't respect even a General Superintendent for libelling their mothers by applying the hal- lowed name to one so unworthy of it. KETURAH.

PERSONALS.

Mr. D. MAREAN, for many years past connected with the American and Western Union Washington office, has resigned his position and retires from the business. The abandoning of the profession by the best men connected with it is to be regretted, though the slight encouragement now offered them to remain in it relieves them from any reproach in the matter.

Mr. H. S. MARTIN, of the Western Union Boston, Mass., office, who has been absent three or four months on the sick list, has returned to-day.

Mr. H. W. WHEELER, formerly chief operator of the Boston circuit, T. P. L., is rusticated at his home "down in Maine."

Mr. J. A. ELEMS, formerly in the main Western Union Boston office, is now at the United States Hotel office.

Mr. JAMES H. BLAKE has resigned his position in the Western Union Boston office, from May 1st, to go into business with his father in Nashua, N. H. He has our best wishes for his future success.

Mr. J. C. ROBINSON has also resigned from the Western Union Boston office, to go into the express business at Saco, Me.

Mr. J. M. E. KIMBALL, the only deserter from the T. P. L. at Boston, Mass., who returned to duty a week before the end of the "strike," has experienced an excellent example of "that same just and liberal" treatment. After two weeks' sickness he has been summarily discharged by the company. Served him right.

Miss N. M. ALLEN, formerly of Webster, Mass., has accepted a position in the lady's department of the Western Union Boston office, as has also Miss AIREY, of Natick, Mass.

Mr. D. B. GRANDY, formerly of the W. U. office, Worcester, Mass., has accepted a position in the Boston office same company.

Mr. P. L. RYDER, of the Worcester office, has been promoted to the position vacated by Mr. GRANDY.

Mr. FRED. L. WHEATON, formerly of the Bay State House office, Worcester, Mass., takes the position vacated by Mr. RYDER.

Mr. GOODWIN, formerly of the Revere House office, Boston, goes to the Bay State House, Worcester.

Mr. CHAS. R. SHERMAN, a Leaguer, thrown out by the strike, is now travelling agent for a prominent Boston firm.

Mr. G. B. SOLDERS, formerly of the Western Union Toledo office, has been appointed manager of the Des Moines, Iowa, office of the Great Western Telegraph Company.

The present address of Mr. JACK CONNOR, formerly of the Franklin Company's New York office, is wanted by several of his old New York friends. When last heard from he was in Elmira, N. Y.

THE TELEGRAPH.

(By Atlantic Cable.)

CABLE SERVICE DISORDERED.

LONDON, April 23d.—The Continental Cable service is somewhat disordered to-day, from some unexplained cause.

CHARTER OF THE GREAT EASTERN.

LONDON, April 26th.—The Telegraph Construction Company has leased the steamship Great Eastern for five years, to be used in laying telegraph cables.

Telegraphic Competition to California.

A CONTRACT has been completed between the Atlantic and Pacific Telegraph Company and the Central Pacific, Oakland and Western Pacific Railroad Companies, for extending the telegraph system of the former and of the Great Western Telegraph Company to the Pacific Coast. The contract provides that the railroad companies shall maintain an efficient system of telegraph lines, to connect with the wires of the A. and P. Company, which, under the telegraphic consolidation with the Union Pacific Railroad Company, extend to Ogden, Utah, in addition to the wires exclusively or mainly devoted to the business of the road. The wires of the Great Western Telegraph Company, with which the Atlantic and Pacific now connect at Chicago, will be completed to Omaha, Nebraska, the first of May, and the new Pacific connection will then be completed. All the railroad lines centring at San Francisco, with one unimportant exception, are in this combination, and will hereafter be worked in competition with the Western Union monopoly.

The Western Union managers have labored hard to

prevent this, the first through competition for California business—even President Orton and Genl. Supt. Stager visiting California—and as a last resort, Judge Caton was despatched to the Pacific to reinforce Mumford and Gamble in opposing the proposed connection and securing the railroad lines to that company, but all their efforts were unavailing, and they were compelled to submit to the mortification of a defeat in this important matter.

The Atlantic and Pacific Company propose immediately to increase their facilities by building new wires West, to accommodate the increased business which this extension will at once throw upon them.

The Great Western Telegraph Company.

The work of stringing the wires of the Great Western Telegraph Company to Omaha, Nebraska, is being pushed forward energetically, and will be completed the first of next week. Superintendent Bliss has several gangs at work, and the work is being rapidly pushed forward. The line between Davenport and Des Moines, Iowa, was opened last week. We shall soon give the names of the new offices and of the employees engaged for them.

Telegraph Office Burned.

A FIRE occurred at Selma, Alabama, on Tuesday, the 19th inst. The fire was discovered about midnight, and is supposed to have been the act of an incendiary. The Selma, Rome and Dalton Railroad had several large freight and other buildings destroyed—among them the office of Mr. M. Stanton, assistant Superintendent, and the railroad telegraph office. Besides the railroad property several private residences were destroyed. The damage to the Selma, Rome and Dalton Railroad is estimated at \$60,000. Preparations are being made to rebuild immediately. In the meantime the telegraph arrangements of the road have been temporarily removed to the ticket office.

FOREIGN TELEGRAPHIC NOTES.

A DIRECT wire is to be laid down between Liverpool and Valentia, Ireland, to facilitate the despatch of American messages. Captain Blacklock is said to have received the appointment of Superintendent of the Atlantic Telegraph Cable, at a salary of £1,000 per annum. Captain Blacklock was for many years in the service of the Electric International Telegraph Company.

At a meeting of the Board of the Anglo-American Telegraph Company, held on April 11th, it was resolved to recommend a further dividend of 5s. per share, free of income tax, for the nine months ending the 31st of January last.

New Use for Electricity.

SOME of the latest applications of electricity are worth budgeting, as instances of our readiness to ride a willing horse to death. We shall have literally, if not logically, ridden electricity to death when we apply it to destroy life; and the suggestion of this application has really been made, both against man and beast. Instead of the barbarous system of hanging offenders, a humane philosopher proposes that we should give them an electrical shock, powerful enough to kill without pain. There is no denying the fitness of this system for a scientific nation. But if the law will not take human life by lightning it might compel cattle slaying hereby. A battery and coil would be far more effective, and far less cruel tools than the pole-axe or the sticking knife. I suppose the angler would consider his occupation gone if he had to fish with an electric line and a torpor-producing bait; yet the whaler has a notion that he can catch his monsters upon an analogous plan. From experiments upon lesser fish, it is anticipated that a whale would be stupefied by such a shock as could be given from a moderate battery carried in a boat, with the aid of a harpoon with double points, connected to the battery by conducting wires. The harpoon, upon striking the whale, would complete a circuit through its two points, and electrify the fish to torpor point, thus rendering his capture easy—at least, so the inventor says.—*Good Health.*

A Valuable Magnetic Watch Clock.

MESSRS. EDMANDS & HAMBLET, of Boston, have recently put up one of their Electro-Magnetic Watch Clocks in the office of Messrs. BROWN BROS. & Co., bankers, at 59 Wall street, in this city. This is one of the most ingenious and useful applications of electricity we have ever seen. A recording apparatus within the clock case is so arranged, in connection with a number of stations in different parts of the building, each provided with an apparatus for closing the circuit, that any neglect of

duty on the part of the night watchman, in making his rounds, will infallibly be detected by his employers upon a subsequent inspection of the automatic record. In addition to this a separate system of wires operates a large clock dial, placed over the first entrance, which is therefore always in unison with the standard regulator.

We should think an apparatus of this kind would be indispensable to every establishment where night watchmen are employed. When its merits become better known and appreciated, it will no doubt be extensively employed by banks, manufactories, &c. We learn that a large number have already been put up in the leading manufacturing cities of New England.

Cheap Wire.

THE advertisement of Messrs. L. G. TILLOTSON & Co., in this paper, affords an opportunity to telegraph managers and contractors to obtain No. 8 galvanized iron wire of excellent quality, at a price even below that paid previous to the late war. Although the price asked cannot be remunerative, yet the demand for wire of this size is limited, and TILLOTSON is not in the habit of keeping on hand an article that can be disposed of, even at a sacrifice. He does not believe in lumbering up his stores with dead stock, waiting to obtain war prices.

In addition to this special lot of wire he has a large supply of all the best descriptions of telegraph wire, which will be furnished at prices which are exceedingly favorable to the purchasers, and defy competition.

Change of Headquarters.

MR. E. D. L. SWEET, the General Superintendent of the Atlantic and Pacific Telegraph Company, has changed his headquarters from Chicago to this city, and may be seen or addressed at the main office of the Company, No. 31 Broadway.

New Patents.

For the week ending April 26, and each bearing that date.

No. 102,252.—SYSTEM OF TELEGRAPHING. Frederick J. Grace, Coytesville, N. J.

Claim.—1. The combination and arrangement of the main line and battery or batteries at the several stations on a telegraphic circuit, substantially as and for the purposes herein specified.
2. The arrangement of the main line as a ground wire with respect to batteries at remote points, substantially as and for the purpose herein specified.

No. 102,295.—POCKET INDUCTION APPARATUS. Curt W. Meyer, New York.

Claim.—1. The arrangement of the bent bar a, of the iron core, in the manner described, to act as a retaining spring for the graduated.
2. The combination of a lead cup, B, insulator D, tube E, coil F, core G, graduated H, and rod i, all being arranged as described.
3. The combination of duplicate cups, insulators, and zinc tubes, with rods e, f, and core G, graduated H, and spring I, all being arranged as described.
4. The method of securing the rods g to the pins k by passing the former through a slot in the latter, then turning back their ends to secure them, and finally soldering the ends of said slots, all as set forth.

No. 102,320.—PRINTING-TELEGRAPH APPARATUS. Frank L. Pope, Elizabeth, N. J., and Thomas A. Edison, New York.

Claim.—1. The combination of a number of automatic printing-telegraph instruments, arranged in one main circuit, and operating simultaneously in unison, when the electro-motive power used in operating the same is derived exclusively from one or more main batteries, placed in such main circuit without the aid of secondary or local batteries, or of mechanism actuated by springs or otherwise, substantially in the manner and for the purpose set forth.

2. The combination of a polarized magnet with an electro-magnet placed in the same electrical circuit, and operated substantially as described, and for the purpose set forth.

3. The combination of the ratchet wheel I, bar F, pawls A A', stops i i', and type wheel T, arranged and operating substantially as and for the purposes herein specified.

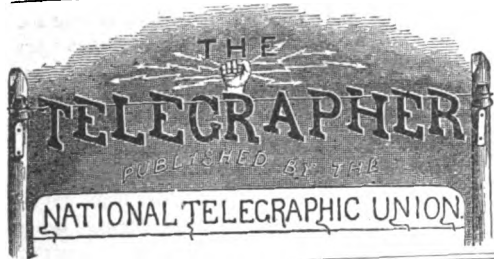
4. The combination of an electro-magnet with the ratchet wheel, bar, pawls, stops, and polarized magnet, substantially as and for the purposes herein specified.

5. The arrangement of the permanent magnet N S, polarized magnet E, electro-magnet M, tongue C, arm D, bar F, pawls A A', stops i i', springs j j', ratchet wheel H, type wheel T, and standards A K, all constructed, arranged and operating substantially as and for the purpose herein specified.

6. The roller t, serrated wheel g, pawl s, ratchet wheel r, click z, and standard q, in combination with the polarized magnet E and the electro magnet M, and their appurtenances, for the purpose set forth.

7. The screw stops d d' upon the standard A, in combination with the type wheel T, substantially as herein specified.

8. The arrangement of the tongue C in the slot b of the permanent magnet N S, by means of a pivot, a, and screw c, whereby the inductive magnetic influence of the permanent magnet N S upon the tongue C is greatly increased, substantially as herein set forth.



SATURDAY, APRIL 30, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.
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Removal.

THE Office of THE TELEGRAPHER has been removed from Room 49 to Room 51, the front room on the same floor as that previously occupied, at Nos. 78 and 80 Broadway.

Particular Notice.

ALL letters, communications, etc., sent by mail to THE TELEGRAPHER or its Editor, should be addressed to Box 6010, Post-office, to insure prompt delivery. Compliance with this request is important, as mail matter is not delivered from the box unless so addressed.

THE OBJECTIONS TO TELEGRAPH INSTITUTES.

OUR readers may perhaps be weary of the subject of Telegraph Colleges or Institutes, but it is one in which every practical telegrapher is deeply interested—which fact must be our apology for devoting so much space to it. We are almost constantly in receipt of letters asking us to expose one and another of these pests, in different parts of the country, and occasionally a remonstrance and protest from the proprietors, against the tenor and severity of our remarks in regard to them.

The objections to these establishments are so numerous and cogent that they ought to be at once abolished. We do not assert that all of them are guilty of deliberate lying and swindling in their circulars, and the inducements they hold out to students to patronize them, but the exceptions are very rare. They almost invariably set out with glowing statements as to the great and increasing demand for telegraphic services, and the extraordinary inducements for young men and women to engage in and devote themselves to the business. This is usually supplemented with equally false statements as to the superior advantages offered by the particular establishment for acquiring proficiency in the practice of the art, and for securing to its patrons desirable situations. Now these statements and assertions, as every intelligent telegrapher knows, are without foundation. We assert from our own knowledge, and as a fact patent to telegraphers generally, that there is no such demand for telegraphic labor as they falsely assert, and never has been, except for a time during the late war. The War Departments, North and South, at that time employed a large number of telegraphers, and the business of telegraph companies was greatly stimulated, and lines rapidly increased and extended. For a year or two there was a demand for telegraphic service at times in excess of the supply. The termination of the war returned the military operators to private service, competing companies were consolidated, and we assert, without fear of intelligent contradiction,

that since then the supply of telegraph labor has been constantly in excess of the demand. There is at present no inducement for additional laborers to enter the field, and it would be better for the profession if not another operator entered the ranks for the next year or two. It is unnecessary to waste time and space in exposing the falsity of the promises to obtain situations for students of these establishments. We have so often done this heretofore as to render unnecessary any further demonstration. We presume our readers have not yet forgotten the letter of the proprietor of a Telegraphic College at the West to a Superintendent of telegraph, offering him ten dollars for every student for whom he would find a place, at the same time stating that he did not care if the party was discharged in a week. The Superintendent was too honest to become a party to such villany, and exposed the rascality.

We do not propose at this time to go into a detailed analysis and refutation of the statements and assertions of these Telegraph College proprietors. Taken as a class they are a bad set, and the less that any one has to do with them the better. An objection to these so-called colleges, even if honestly conducted, is that they impart at the best only a theoretical knowledge of the art. After going through the prescribed course of instruction, the novice, if placed in a telegraph office, finds himself or herself utterly incompetent to discharge the practical duties of the position assumed. The theoretical instruction imparted is of little service, and the disappointed graduate is obliged, if still determined to continue in the business, to learn its practical operations. Almost invariably, if some unusually incompetent operator is heard butchering the business of a line, upon inquiry it is ascertained that he or she is a Telegraph College graduate. We have known the business of a line almost entirely destroyed by the supposed economy of employing Telegraph College graduates as operators. As a logical inference from the above premises, it follows that the time and money expended in patronizing such concerns is practically wasted, or worse than wasted.

Another favorite assertion of Telegraph College proprietors is that any person of ordinary intelligence and ability can become first class telegraphers. This is utterly false. To become a first class telegraph operator requires peculiar talents and ability, which all do not possess. We have known persons of superior intelligence and ability to utterly fail in the attempt to become even average telegraphers. It is a business which must usually be learned at a comparatively early age, in order that any great proficiency may be attained. It is almost impossible for middle aged persons, or generally for those much above twenty years of age, to become proficient in the art.

In conclusion we would state, for the information of those who are likely to be duped into patronizing these establishments, that the supply of operators is, at the present time, and is likely to be for years to come, in excess of the demand. The number who learn in the regular way, through telegraph offices, is constantly in excess of the increase in the demand for such services. Many telegraphers are now out of business, and the best operators are constantly abandoning the profession to engage in other business, which offers them better inducements. In this issue of THE TELEGRAPHER alone will be found in our "personal" column notice of the retirement of five or six, crowded out of the business by the influx of cheap and incompetent operators. These are usually of a superior class—men who can do better pecuniarily at almost any other business than in telegraphy—most of them engaged in it intending to make it their permanent employment, but find, after years of hard work, that it has nothing to offer of sufficient value to counteract the inducements which lead them into other avocations.

The inducements to engage in and remain in the telegraphic profession are decreasing. Salaries are declining, and the failure of the League has removed about the only obstacle to the carrying out of economical arrangements

by telegraph managers. The Western Union Company promptly availed itself of the opportunity to reduce the salaries of those engaged in the strike, generally from ten to twenty per cent., and the work of reduction is still going on. When any operator's salary is not actually reduced a vacancy is filled at a reduction from the salary previously paid. The competing companies have generally paid lower salaries than the Western Union, and it is certain that they are not now increasing the amount of their salary lists.

Under these circumstances what inducement is there, even if the Telegraph Colleges could make good operators, for any person to pay money to learn the business? Our advice to any one determined to become a telegraph operator is either to abandon the idea or to enter some office and work up in the regular way, but above all means avoid telegraph schools, colleges and institutes, and save money and time.

The Pacific Submarine Telegraph.

We have already expressed our approval of Mr. FIELD's project for completing the telegraphic circuits of the world. Its great importance to this country should at once secure to it the favorable consideration of Congress and of the capitalists of the country. We desire, however, to make one suggestion to Congress in connection with the bill now before it for action. In granting a land subsidy in aid of the scheme, it is eminently proper and desirable that a condition should be inserted in the act that the company shall not make an exclusive contract for connection with any telegraph company now existing or hereafter created. All telegraph companies should have the privilege of connection with the proposed line upon fair and equal terms. In this way it will be impossible to use the enterprise as a means of strengthening or perpetuating a telegraphic monopoly in this country—which should, in any event, be carefully guarded against.

A Telegraph Spy System.

It has been known to us for some time that the Western Union Telegraph Company, by an arrangement with the well known Detective Agency of ALLAN PRICKER & Co., regularly employed detectives to watch its numerous employés, especially in this city, and to report constantly their comings and goings, and everything which it might be considered desirable to know respecting them. This system was, with other War Department customs, introduced or extended by the present General Superintendent of the Eastern Division, but with what particular advantages, has not as yet been made manifest. Unless the high officials deliberately falsified in their statements, these detectives failed to discover or develop the existence of the Telegraphers' Protective League, which, from the importance attached to it when its existence and extent was made known by the officers of the League, would argue a reprehensible neglect of duty or disgraceful stupidity on the part of the detectives detailed for the dirty work, and a waste of the money expended.

We regret to learn that the detective to whom, for some months, has been entrusted the duty of watching the office of THE TELEGRAPHER, has been withdrawn, and assigned to another field of observation. We are rather proud of the visitors, who, from time to time, favor us with their calls, and trust that the daily reports made by the individual paid for watching us have proved interesting and remunerative to his employers.

Seriously, what a contemptible business is this for a great corporation to be engaged in. The spying into private matters connected with suspected persons is one of the chief instruments used by despots everywhere to maintain and perpetuate their power. It is not, therefore, surprising that men of ECKERT's calibre and disposition should resort to such dirty instrumentalities and practices, but there are other men, generally esteemed honorable, connected with the Western Union Company, whom we

should hardly have supposed capable of assenting to such a degrading surveillance of the ladies and gentlemen in their service.

Call off your dogs, and treat your employes justly and kindly, and there will be no necessity for wasting the money of the stockholders on spies and informers. The reduction of profits, of over a million of dollars per year, shows the urgent necessity for economy, and here is an expenditure which can very properly be entirely saved with every possible advantage to the company, the self-respect of the employes, and the public.

The Le Clanche Manganese Battery.

We are glad to learn that Mr. CHARLES WILLIAMS, Jr., of 109 Court street, Boston, has imported a quantity of the Le Clanche Manganese batteries, which, as will be seen by his advertisement, he is prepared to furnish complete with the necessary chemicals to put into immediate action.

For many purposes the Manganese Battery is peculiarly adapted, and now that it can be readily obtained from Mr. WILLIAMS, we have no doubt but that our electricians will develop additional requirements and uses for it. The readers of THE TELEGRAPHER have heretofore been very fully informed as to the composition and character of this battery, but hitherto could not readily procure it, with chemicals, etc., of the requisite purity.

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MAGNETS supplied of any resistance required.

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Owing to the decline in gold, and other circumstances, we are now supplying our superior quality of

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at prices much below former rates. Parties desiring the Best Wire at the Lowest Price should call upon us. Having sold over 6,000 miles of this Wire during the past eight months, to the satisfaction of the parties purchasing, we know whereof we are speaking.

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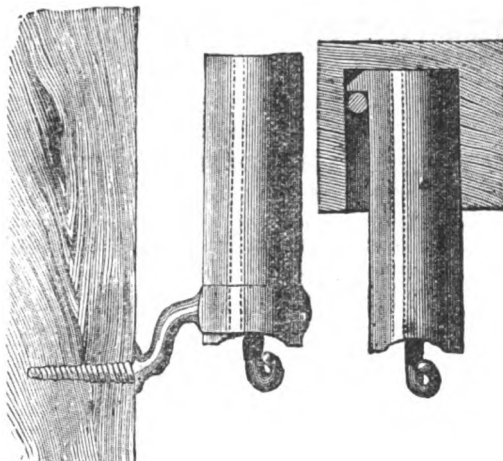
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Its insulating properties exceed those of the glass a hundred thousand fold.

In strength and durability it has no equal.

They are warranted not to break or part.

They are made with a screw shank, to fasten into the pole, price 38 cents each, or without the screw, for cross-arms, 30 cents each.

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Among other Telegraphic Supplies constantly kept on hand, they are prepared to furnish promptly the following novel articles:

KERITE (OR HORN COVERED) COPPER OR COMPOUND WIRE OR CABLES,
COVERED COMPOUND AIR LINE WIRE,
BLASTING APPARATUS, CARTRIDGES, BATTERIES, &c., &c.
CALCIUM LIGHTING APPARATUS,
MEDICAL BATTERIES,
INDUCED AND DIRECT CURRENTS;
ELECTRO-PLATERS' BATTERIES AND MATERIALS,
ELECTRO GONGS, OF ANY DESIRED SIZE OR WEIGHT,
ALARM APPARATUS.
PATENT APPARATUS FOR THE MANUFACTURE OF NITRO-GLYCERINE, ELECTRICAL CLOCK WORK,
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Relative TENSILE STRENGTH, homogeneity and elasticity—decreasing the liability to breakage from cold weather, sleet, etc.;

CONDUCTIVITY—insuring great improvement in the working of lines in any condition of the weather;

And in its DURABILITY, which greatly exceeds that of the best galvanized iron wire;

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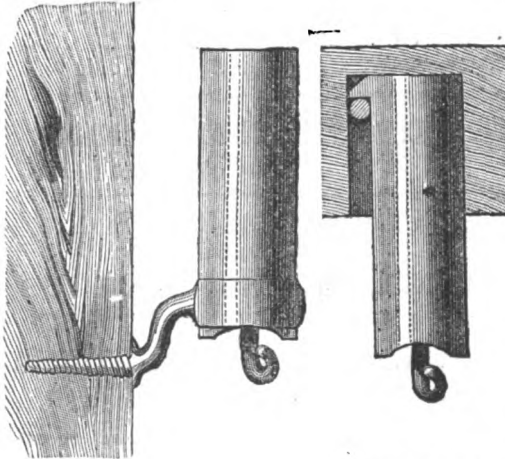
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PRACTICAL TELEGRAPHY,
BY
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ENGINEER TO THE
ELECTRIC AND INTERNATIONAL
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FOR THE SPRING OF 1870,
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OF

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It has been the custom of the present publisher and editor of
"THE TELEGRAPHER"

to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to

INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES AND INJUSTICE practised by them upon its employes, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

The President of that Company, however, distinctly disavows this action, and says, in a communication to the editor of THE TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S) 'discontinuance and discountenance' a test of competency for our service."

It will be seen, therefore, that this movement is one incited on the part of certain of the subordinate officials of that Company by personal spite and chagrin, because the paper has remained UNWAVERINGLY FAITHFUL to the interests of the Practical Telegraphers of the country, and could not be used for the personal ends of these disgruntled officials.

It remains to be seen whether the Practical Telegraphers of this country CAN BE RELIED UPON to stand by those who seek to secure to them JUSTICE AND FAIR TREATMENT.

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His relays were awarded the

FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-160th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same.

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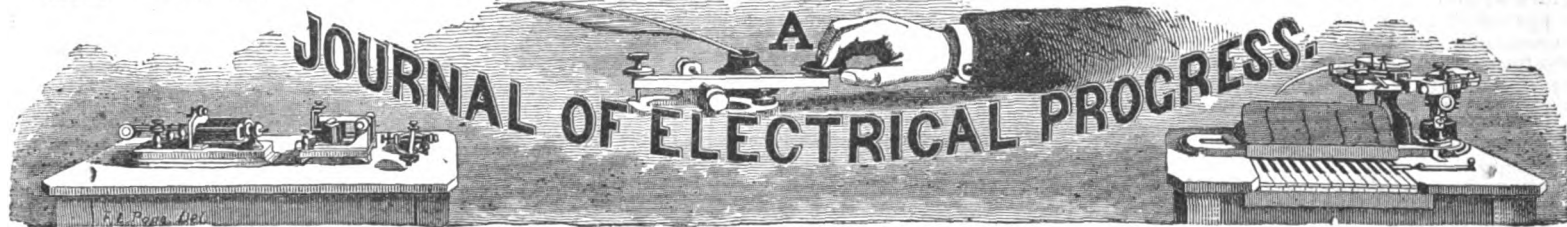
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THE TELEGRAPHER.



Vol. VI.—No. 37.

New York, Saturday, May 7, 1870.

Whole No. 199.

[Written for *The Telegrapher*.]

Heinrich's First and Only Experience in Telegraphy.

COMMUNICATED TO HIS FRIEND IN HAMBURG.

"Mein lieber friend! I takes dis day
To write und tells you all der news,
Although I nothing has ter say,
So you will have to me esquire
Wiles I mein dreadful troubles tell
To you, mein friend, who loves me well.

"Ven first I landed mit New York,
Und down to Castle Garden went,
I tells a man dat I wants work,
Und he to me a gemman sent
What says, 'See here! mein littel man,
What is your name?' I says 'Van Dam.'

"Schust wol! he say, 'now den you come
Straight to mein office, right away;
I want you mit der telegrafs run,
As fast as dey comes efery day;
Mit odder boys you must not fight
Und I pays you each Friday night.'

"Und so I went—und run'd so fast
I almost preaks mine precious necks:
Und reached der telegraf at last
(An office that was called F. X.)
One corner was on William street,
Schust were der Beaver does it meet.

"Mein gracious! what an awful noise
Dem littel Tickers made to me:
Und dere was sixteen odder boys,
Who called me 'Little Yarmany,'
Until I hid one in der schnoot,
When all der rest got up und scoot.

"From nine to five, all troo der day,
I run mit messages like mad;
I had no time to eat or play,
Und I was never very sad;
Pecause I hadn't time to think,
Und scarcely time mein eyes to wink.

"First Hutch. would say, 'You, Dutchie, here,
Run as if der debbil kicked you!'
Den Mike would yell, 'Komme-ze here,
You rid-headed Sullivan you!'
Und den I had to tear around,
Or Crate would sure mein head to pound.

"One day (we had not much to do,
But had three fights out in der vault—
Und Hutch. und Crate der work was through)—
Dey sent to Schedler's for some salt;
Dey said it was to batteries fix,
But what dat meant I knowed not nix.

"Dey put der salt into der jars,
Und said dey guessed dat dat would do.
Und den I heard some loud 'ha-ha-ha!'
'I guess we'll put old Yarmany through!'
'You little wretch, come here,' said Crate,
'We'll teach you how to operate.'

"Und den dey say, 'now schust look here,
You taps your finger on dis key;
Und though it does seem very queer,
A dot und dash makes A, B, C.
Now, Yarmany, you schust take hold,
Und hurry up before it's cold.'

"Und so I did—und gave one screech,
Und jumped about five feet, or more!
For half an hour I lose mein speech,
Und all mein nerfs feels very sore;
Und all der mens laugh out aloud,
Und all der boys join mit der crowd.

"So after dat I goes no more
To touch dat operating key,
For fear I bust, und den I see sure
You hear no more from Yarmany.
So now, I see told you all I can,
I signs myself

"HEINRICH VAN DAM."

TELEGRAPHIC communication with India is now so far perfect that electricity outstrips the course of the sun, as it frequently happens that messages transmitted from Calcutta at noon are delivered by the Indo-European Telegraph Company at 10.30 A. M.

ARMY TELEGRAPH REMINISCENCES.

BY AGITATOR.

NO. VI.

FROM July 5th, 1863, until nearly the middle of the month, the work of paroling the Confederate Army at Vicksburg, Miss., was being accomplished.

Major-General Sherman, commanding the Fifteenth Army Corps, had, immediately after the surrender, been ordered in pursuit of General Joe Johnston, who, with a large force, was reported as being strongly entrenched at Jackson, Miss., forty miles distant from Vicksburg. A large number of operators, who had been engaged in the field during the siege, were now lying idle. The telegraph construction party followed Sherman, reconstructing a single wire of the Confederate line, which had been badly damaged by both armies.

On the 13th of July word was received at Vicksburg that the wire would be in readiness for communication between the latter place and General Sherman's headquarters, whose force was then investing the Confederate works at Jackson.

Our old acquaintance, Jack Ingle, and another operator were selected to proceed and report to General Sherman for orders. Twelve miles of the route to Big Black River could be traversed by rail, but after reaching this point our operators became aware that no transportation had been provided for them beyond, and that it was expected of them to go through *some way*, and that, too, in as quick time as possible, inasmuch as the General would be anxiously looking for them so soon as it was reported to him that the wire was in working condition.

Operators, as a general rule, are not very fond of making forced marches on foot, and our two knights were no exception.

To march some twenty-eight miles through an enemy's country alone, would be taxing their walking powers beyond endurance. Then, they had army telegraph instruments in their pockets, and keys to the cipher, either of which would serve them as good passports for hanging, should they be captured by Confederate bushwhackers. When many propositions had been considered and given up as impracticable, and when the last faint hopes of relief were ebbing, relief came. An army wagon laden with hard tack, and drawn by four mules, was seen slowly meandering its way toward the ford on Big Black.

Our friends were elated at the prospect of assistance in their dilemma, and hastened to "speak the approaching sail." They soon discovered that the wagon was manned by three perfect specimens of Down East Connecticut Yankees, and their inquiry, whether are you bound? brought forth from the "man at the wheel" the following characteristic reply:

"Waal, if we kin git 'cross this tarnal black ditch here 'thout gittin' stalled, we 'spect to go thru the hull o' the way to General Sharman, who's out there arter them runnin' Suthners."

"There is just where we wish to go," our friends replied. "We are telegraph operators, ordered out to report to General Sherman, but we don't find that anything else has been ordered out for our benefit in the way of transportation. Could we get in and ride with you?"

"Donno 'bout that, 'pears to me we've got jist about load 'nuff. Cant ye walk?"

"Yes, but not being accustomed to it, we fear we could not go far without giving out. We *must* go through, and by walking over the worst road, and riding where it is good, we can manage it."

"Guess so. You don't look 's though you war very long winded chaps, anyhow." Waal, crawl in, we'll try and haul ye. Get-ap!"

Our friends had secured passage and were soon sailing along merrily. Clambering in beneath the canvas top they ensconced themselves upon the tops of hard tack barrels, and gave themselves up to the mercy of the pilot,

who seemed determined to traverse the roughest portion of a naturally rough road, probably to give them a fore-taste of what was to come.

Being in close proximity to the hard tack, naturally the thought forced itself upon the minds of our friends that they had wholly forgotten to provide themselves with rations. This was a damper; no sooner out of one sea of trouble than into another. There was no help for it now, however, and they had only to depend upon the generosity of their fellow travellers. They had forgotten to furnish their haversacks, but they had not forgotten their canteens. They were well supplied with a certain red-dish colored liquid. How strange that they should neglect that which would invigorate and strengthen, and amply provide themselves with that which would craze and stupefy. Oh, what numbers of young, promising, intelligent operators went into the army service with splendid reputations for sobriety, and returned to their northern homes with that craving appetite for drink which has carried many, and is carrying others to untimely graves.

The Yankee vehicle forded the Big Black at about four, and occupied the time till seven P. M. in going about six miles. A small creek was reached, and it was determined to bivouac here for the night. The mules were unhitched and placed at their boxes of corn; a small fire was lighted, some beef and hard tack was produced and speedily prepared by the Down Easters, and soon everything was in readiness for supper. Jack and his companion had watched the preparations going on with no small satisfaction, being very hungry. They had taken the precaution to inform the Yankees particularly, before halting, that they were unprovided with rations, which only elicited a gruff *humph*. What was their astonishment and even dismay to behold their Connecticut friends sit down to the rough repast without even asking them to join. This was too much. Jack swore and raved, "wished the infernal Yanks had never appeared, to allure him into this wilderness to starve." Himself and companion were too independent to ask for even a hard tack, and the consequence was they were left to hunger on. But the worst was yet in store. It was bed time, and a soft piece of ground was to be selected for a couch. Fortunately they had not forgotten their rubber and woolen army blankets, and having made selection of their place of rest, near the creek, the rubber blankets were spread, the woolen ones served as a covering, and there, locked in each other's arms, our unfortunate operators courted Morpheus. Jack finally swore himself to sleep, and his troubles were all over for the time being; but, alas! greater vexations were in store for him. He was not allowed to finish his dream of love ere he was awakened by the patter of large drops of rain upon his sunburnt cheek. A consultation was had, and resulted in the decision that the best policy was to remain quiet and *let her rain*. And rain *she* did with a vengeance. It poured. The nights in that latitude are cool, even during the warmest time of the summer, and I cannot imagine a more cheerless situation than the one in which our friends found themselves. Nevertheless they slept—a restless uneasy sleep, which the canteen was instrumental in securing for them. At the first dawn of day the loud voices of the Down Easters, talking to their mules, roused them to a full consciousness of their situation. Breakfast passed in like manner as the supper, and our friends were left to hunger on. The insensible wretches devoured their rations like wolves, in their selfishness, and Jack declared they "were not human beings—they were hogs." He verily believed they would allow himself and companion to starve right before their eyes, and not offer them a mouthful to save them from death.

It was really too bad, but there was no remedy except in hurrying along on the march. Clinton, a few miles in advance, would soon be reached, and our friends would there be sure of relief. "Little" Robinson had been sent

to this point only a few days previous, and had established an office in a comfortable vacant house.

This haven of rest was reached about noon, where a hearty meal and a few hours of repose brought back to our friends their usual amiable frame of mind, and caused the past few hours to be recollected only as a capital joke, and as the inevitable lot of a *soldier*.

Our friends applied to General McArthur, commanding the post, and obtained transportation from this point to the end of their journey. General Sherman's headquarters were reached about 8 P. M. without further mishap, and the line opened for communication immediately to Vicksburg.

Who can say that telegraph operators did not endure severe privations, and expose themselves heroically during the continuance of the great rebellion?

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., May 3.

TO THE EDITOR OF THE TELEGRAPHER.

MR. WASHBURN'S Telegraph Committee have continued their hearings, and have had before them Mr. George B. Prescott and President Orton, on behalf of the Western Union Company's interests, and in opposition to a postal telegraph. Both of these gentlemen are very reticent in regard to what transpired upon their examination. It is understood, however, that Mr. Washburne availed himself of the opportunity to obtain some information in regard to the working of the Commercial News Department of that Company, in regard to which somebody had been posting him. The investigations of this Committee, limited as they have been by the refusal of the House to grant the power to send for persons and papers, are about concluded, and Mr. Washburne is engaged in writing up his report. Two members of the Committee have not yet been brought to see the great necessity and advantages of the proposed postal telegraph, so that Mr. Washburne's report will not receive the unanimous endorsement of the Committee; but it is not known as yet whether a minority report will be made. All that Mr. Washburne expects to accomplish at this session is to get his report printed for general circulation, and place his bill on the calendar, so that it will go over as unfinished business.

Mr. Hubbard's scheme for a hybrid telegraph monopoly, partly private and indirectly governmental, does not seem to have any vitality at present. It is very generally believed that the Western Union managers are in some way interested in Mr. Hubbard's scheme, and it is understood that if it should by any means pass, the Western Union Company are to come in under it, organize as the Postal Telegraph Company, demonstrate that the plan is impracticable, and then saddle the Government with their wires at a remunerative price. I do not vouch for the truth of the above, but that is the way the matter is generally regarded here. Nothing definite will be accomplished during the present Congress with regard to either scheme, however; but the fight will be kept up, in the hope of bringing about the transfer during the next Congress.

Nothing has been done in either House since my letter of last week, with the exception of the introduction of bills for charter of cable lines. On Thursday of last week Mr. Fenton, of New York, introduced in the Senate a bill to incorporate the Washington Transatlantic Telegraph Company, and to facilitate telegraphic communication between America and Europe. This bill names William Chase Barney—notorious in connection with all sorts of abortive speculative schemes—and associates as corporators, to lay a cable between the United States and Belgium. It was referred to the Committee on Foreign Relations. As it has not yet been printed I cannot furnish the details, but it is safe to say the corporators will have been gathered to their fathers long before any cable is laid under its terms.

On Monday last Mr. Johnson introduced in the House a bill to incorporate the Pacific Cable Company, and to facilitate and encourage telegraphic communication between California and China, which was read twice, referred to the Committee on Foreign Affairs, and ordered to be printed. It incorporates Richard Lamberts, of San Francisco, and associates, and authorizes them to lay one or more telegraphic cables from San Francisco, California, to Japan, and Shanghai, in China. The capital of the company is to be \$8,000,000, the whole amount of which is to be paid in within two years from the organization of the company. The Secretary of the Navy is authorized and required to detail vessels to make surveys and soundings

on the proposed route of the cable, to assist in laying the cable, transporting materials, etc. The company is also authorized to issue thirty year bonds to the amount of \$4,000,000; the interest at *six per cent. per annum*, gold, is to be guaranteed by the United States. The bill further makes the usual provision for priority of Government use of the cable, and for a preliminary deposit with the Government of \$150,000 in United States bonds as a guarantee of good faith.

There is no probability of the \$150,000 deposit ever being called for.

The bill introduced by Mr. Farnsworth in the House, on the 25th of April, to charter the American and Holland Ocean Cable Company (Colorado Jewett's scheme), does not mention any names as corporators, and does not provide for the guarantee of interest on the ten millions of bonds, as originally proposed. The gist of this bill is in the last section, which is as follows:

"Sec. 4. And be it further enacted, That the American and Holland Ocean Cable Company are hereby granted a similar charter, as asked for by Cyrus W. Field, on the same terms and conditions, or as may be modified for laying cables from the Pacific coast, or upon the same terms as may be granted to any cable company, without, however, any land subsidy to either the said Cyrus W. Field, any company, or the said American and Holland Ocean Cable Company. The said American and Holland Ocean Cable Company being hereby empowered to extend the cable laid between New York and Holland, by wires over the Continent of America, to connect with the proposed ocean cable to be laid under this bill, between the Pacific coast, China and Japan."

These various schemes and modifications of old schemes are probably put in for the purpose of forming a combination to extort something from the party represented by Mr. Cyrus W. Field, whose proposed charter is universally regarded with favor, and which is the only one likely to pass, or to be carried into practical operation, even if the others should be favorably acted upon.

On Monday last Mr. Taft presented in the House a joint resolution of the Legislature of the State of Nebraska, endorsing a postal telegraph scheme. Efforts are to be made to make capital for these schemes by obtaining endorsement of them from State Legislatures, the members of which generally are about as ignorant on the subject as upon the differential calculus.

CAPITOL.

Telegraphic Matters in the Quaker City.

PHILADELPHIA, April 26.

TO THE EDITOR OF THE TELEGRAPHER.

MANAGERS Rumsey, of the P. and A.; Merrihew, of the W. U., and Dyer, of the B. and B., have issued orders to their respective offices in Walnut street, in regard to a much abused privilege which these companies have heretofore allowed their patrons to enjoy. I speak of the tacking on to almost every message from five to twenty words, which they would ask to have sent "D. H." The order prohibits any words except such as "answer immediately," "answer quick," or words of like import, being sent free in future. Of course the brokers are very much incensed at it.

The B. and B. have moved into their new office, at 310 Chesnut street, which is commodious and comfortable, and a decided improvement on the vacated office. I congratulate Manager Dyer and the other employees.

At the big wigwam, or the War Department—if that is better understood—all are gentle as lambs. Not that it is their natures, but because there roameth about a lion seeking whom he may devour; and as the lion has not had a feast since the "late unpleasantness," you may expect startling news from that jungle soon. Why does not Manager Merrihew have the "first floor" properly secured against wintry winds and summer's suns? Why does he not make it at least habitable? His neglect to do so has resulted in the early death of Mr. James Carley, who was receiving clerk, and now Messrs. Gill (assistant cashier) and Reynolds (clerk) are on beds of pain, and all from the neglect of the "high and mighty" ones to provide for the comforts of those whose misfortune it is to be in that department.

A furnace in the basement of the P. and A. would add greatly to the comfort of the operating department. When does Manager Rumsey propose to make this improvement? In this connection I would suggest that the force be increased. The hours, as now arranged, are entirely too long for the work required. Why can't the men have relief, at say five o'clock P. M., and not be required to do night duty? Might not a respectful protest, addressed to General Superintendent McCargo, remedy this? It seems to be the policy of the P. and A., like the W. U., to carry on business as economically as possible, regardless of the welfare of employees. It is time, gentlemen, you had ceased this. Oh! for the days of yore. Will the fraternity ever again enjoy a second "American," that model of telegraph companies? Alas! I fear not. THE TELEGRAPHER still waves in our city. Guess they must have damaged their toes when they kicked against it and had to give it up. "If at first you don't succeed, try, try again."

LA CROSSE.

Another Telegraphic Confidence Swindler.

MONMOUTH, ILL., April 20th.

TO THE EDITOR OF THE TELEGRAPHER.

A YOUNG man, calling himself Luther Wilson, from Rock Island, Ill., called at my office about the 28th of last month and introduced himself, stating he was day operator for the P. & A. line at Rock Island, Ill., and visiting here for a few days. He gained the confidence of several young men to whom I introduced him, and, after staying here about four hours, he borrowed money from me and then borrowed more money from other parties to whom I had introduced him. He then left, saying he was going to work again, and promising to repay what he had borrowed as soon as he reached Rock Island. Hearing nothing from him after a reasonable time had elapsed, I ventured to write to Mr. Haskins, Superintendent P. & A. Co., at Chicago, and that gentleman replied that he did have an operator at Rock Island named L. Wilson, but he left in a very mysterious and unexpected manner, and his present whereabouts he does not know. Wilson states that he has a brother an operator at Rock Island, working for the Chicago, Rock Island and Pacific R. R., and that his father is a conductor on the Chicago, Burlington and Quincy R. R., Quincy Division. I wish to caution all others to beware of this gentleman (?) when he makes his appearance at their offices.

A VICTIM OF MISPLACED CONFIDENCE.

Western Union Exclusiveness and the Proposed Morse Testimonial.

PHILADELPHIA, April 22d.

TO THE EDITOR OF THE TELEGRAPHER.

THE illiberality shown in the circular emanating from the Western Union headquarters, in regard to the proposed Morse Testimonial, is enough to make all telegraphers feel righteously indignant. Is it not exceedingly unjust and ungenerous to the telegraphers in the employ of opposition lines that this testimonial should be a Western Union affair exclusively? Its originators may say that the telegraphers of opposition lines have the privilege of getting up another testimonial to the Professor themselves; but, considering that they are not strong enough, numerically, to do much alone, it looks too much like taking advantage of circumstances. Undoubtedly there are telegraphers not in the employ of the Western Union Company who look upon Prof. Morse as a public benefactor and a man of sterling integrity, and who would like to express their esteem for him in some way, but not under the name of the Western Union Company. How much more gratifying would it be to Prof. Morse to get a free-will offering from the telegraphers of all companies, than a testimonial from one company, to which all its employees are expected to contribute. Make it a national, not a sectional tribute. The Western Union may be the great company, but it has not yet absorbed all the telegraphic fraternity.

SUB ROSA.

To Correspondents.

THE old American Telegraph Company had several chief operators here. The operator mentioned was, at one time, in the employ of that company, and is still in this city, though not engaged in telegraphy.

PERSONALS.

Mr. R. J. HAMILTON has been appointed manager of the Elko, Nevada, office of the Western Union Company.

Mr. M. M. PATTERSON has been appointed night train despatcher at Rawlins, for the Laramie division of the Union Pacific Railroad.

Mr. G. H. CAMP is agent and operator at Lookout Station of the Union Pacific Railroad.

Mr. J. L. SEARS, lately of the Cheyenne Western Union office, has been transferred to the Virginia City, Nevada, office.

Mr. ED. CHAPMAN is night operator, at Medicine Bend, for the Union Pacific Railroad.

Mr. GEORGE IRWIN, from Elko, Nevada, has been appointed night operator for the U. P. R. R., at Rock Springs.

Mr. JOHN FITZPATRICK is at Sacramento, California, waiting for an opening.

Mr. J. INGLE is operator and agent of the Union Pacific Railroad at Table Rock.

Mr. J. H. THATCHER, formerly of the Sacramento, Cal., office, has accepted a position with W. U. Co. at Virginia City, Nevada.

Mr. H. L. RAY, late Capitol office, Sacramento, Cal., has taken a position in the main office, same place.

Dr. HUBBS, of Vancouver, has accepted a position as assistant operator at Stockton, Cal.

Mr. JAMES CASSELMAN, of the Western Union Sacramento City office, has taken charge of the State Capitol office.

Mr. SAM RANKEN, late of Branch office, San Francisco, has taken his old place in the main office.

MILTON F. ADAMS is once more the manager of the Cosmopolitan Hotel office.

Mr. D. C. WILLIAMS, late of the Western Union office, Sacramento, has again retired from the business.

Mr. GEORGE T. HITCHCOCK, late of the C. B. & Q. Railroad, has been appointed agent and operator at Oquawka, Ill., of the Rockford, Rock Island and St. Louis Railroad.

Mr. JOHN LEACH, an old timer, left for California May 1st. Doubtless his acquaintances there will be glad to meet him after his lengthened absence. He has been with the P. & A. since the strike.

Mr. D. T. BERRY has been pardoned, and assigned to a place in the Western Union office at Davenport, Iowa.

Mr. EDDIE DORVAL fills a place at Keokuk.

Mr. CHAS. W. YORK has been appointed to the management of Des Moines, Iowa, with Mr. ED. RATTON, another Chicagoan, as assistant.

The irrepressible PATCH takes a situation in the Chicago W. U. office.

Mr. WM. H. H. KELSEY, is in the P. & A. office, at Dubuque, Iowa.

Mr. E. F. SMITH was last seen passing Davenport, down the river.

Mr. J. H. GAGE is in the C. R. I. & St. Louis office, in Chicago.

The P. & A. force in Chicago consists of Messrs. GILES, LUDLOW, WEBSTER, E. G. FOOTE and RUDD—M. C. BALDWIN, Manager.

Messrs. COGGER, BAKER and WHITFORD run the A. & P. Chicago office.

Messrs. DONNELLY, BLOOMFIELD, PICKERING and KEARNEY comprise the force of the Great Western in Chicago.

Mr. JAMES KING, an Erie lad, late of Dubuque, is in the C. B. & Q. Railroad office, Chicago.

Miss E. M. STANTON sits in her old place in the W. U. Chicago office.

Mr. GEO. STANTON is at Naperville, Ill.

Mr. WM. WELLS, late of California, is in the city, out of employment.

Mr. D. S. FOOTE takes a place in the Chicago W. U. office.

Mr. J. N. BRADLEY is ticket agent at Mineral Point, Wis.; does telegraphing to keep in practice.

Mr. M. S. BACON, who struck at Des Moines, is on the Iron Mountain Railroad, in Mo.

Mr. CHARLES B. BURCH, late of the C. N. D., Chicago, goes West in the mining interest.

Messrs. POTTER & HAWLEY, formerly of the C. & N. W. Railroad, Chicago, are both in the far West.

Mr. WM. F. ALTEMEYER has been appointed Manager of the Jacksonville, Ill., office.

Mr. W. F. ARMSTRONG is in St. Louis.

Mr. J. W. BELL is at Galena, Ill.

Miss F. W. WHEELER, late of Chicago, has been placed in charge of Warren, Ill., P. & A. office.

Miss KATE DINEHART leaves Savanna, Ill., May 1st, and goes to Davenport, Iowa.

Mr. JAMES FARRELL, late of Bay City, Mich., has accepted a situation in the Chicago W. U. office.

Mr. ALLEN C. KNAPP runs the W. U. branch in the St. James' Hotel, Chicago.

THE TELEGRAPH.

(By Cable.)

THE WEST INDIA AND PANAMA CABLE.

HAVANA, May 4.—The West India and Panama cable expedition arrived at Santiago de Cuba on the 29th ult.

Fire Alarm Telegraph.

HIS Honor the Mayor, the Committee on the Fire Department, and many of the officers of the Fire Department, met in the office of the Chief Engineer, Saturday afternoon, to witness the working of Gamewell & Co.'s Automatic Fire Alarm Telegraph, with a view of its substitution for the present alarm in this city. By this method the alarm is given entirely by electricity, even to the ringing of the bells, and there is very little chance for a false alarm, caused by excitement or misunderstanding. In simplicity, durability—almost infallibility—and economy, the method appears to have strong claims for public favor.—*Providence Journal*.

New A. & P. Office in Brooklyn.

AN office on the Atlantic and Pacific line has been opened in the office of the Brooklyn *Daily Union*, at the lower end of Fulton street, with Mr. Emil Denzler, late of the Brooklyn Western Union office, as operator. This will be a great accommodation to parties in that section of the city, as previously the nearest office was in the vicinity of the City Hall.

Telegraphic Communication with India.

ANOTHER illustration of the rapidity of our telegraphic communication with India was afforded on Monday. At twenty-five minutes past eleven on that night a summary of Mr. Lowe's budget was forwarded to Bombay by the British Indian Submarine Telegraph Company. The despatch thus transmitted appeared in the Bombay papers published on Tuesday morning. At the office of the Indo-European Telegraph Company experiments took place on Tuesday, in the presence of several members of the Indian Council, which gave some interesting results. Communications were sent to Teheran, in Persia, a distance of 3,700 miles, and answers were received in thirty seconds. The time in Teheran was 3.27 P. M., and in London 11.59 A. M. At 12.45 P. M. a message was forwarded from London to Calcutta. This reached its destination in twenty-eight minutes, the time at Calcutta being seven minutes past seven in the evening. The service of the Indo-European Telegraph Company is in connection with the cables of the Government of India through the Persian Gulf.—*Mechanics' Magazine*.

Speed of Electric Signals.

PROFESSOR GOULD has found that the velocity of the electric waves through the Atlantic cables is from 7,000 to 8,000 miles per second, and depends somewhat upon whether the circuit is formed by the two cables or by one cable and the earth.

Telegraph wires upon poles in the air conduct the electric waves with a velocity a little more than double this, and it is remarked, as a curious fact, that the rapidity of the transmission increases with the distance between the wire and the earth, or the height of the support. Wires buried in the earth likewise transmit slowly, like submarine cables. Wires placed upon poles, but slightly elevated, transmit signals with a velocity of 12,000 miles per second, while those at a considerable height give a velocity of 16,000 or 20,000 miles.—*Journal des Telegraphes*.

The Proposed Western Union Testimonial to Professor Morse.

It is understood that the testimonial proposed to be presented to Prof. S. F. B. Morse on his eightieth birthday, by the employees of the Western Union Telegraph Company, is to be a set of solid gold telegraph instruments, set with diamonds and rubies, should the contributions amount to the necessary sum.

TELEGRAPHIC BREVITIES.

The Kansas Pacific telegraph line was completed to Denver on Wednesday, April 20th.

From recent experiments on telegraphic lines, in some of the rocky and mountainous districts of Vermont, Mr. Moses G. Farmer found the resistance, for two or three miles, equal to the usual resistance on a line of five hundred miles.

A meeting of the most eminent Telegraphic Engineers of this country is to take place shortly in New York City—the main object of this meeting being to pass resolutions in favor of the adoption of the Siemens unit as the universal international telegraphic standard.—*The Scientific Journal*.

FOREIGN TELEGRAPHIC NOTES.

IN view of the sharp competition to be anticipated between the new rival routes to India, the Board of the Indo-European Telegraph Company has been strengthened by the appointment as a director of Mr. H. Weaver, so long known as the Secretary of the Electric and International Telegraph Company, and latterly as Secretary of the Indo-European Company. Mr. W. Andrews, Secretary of the United Kingdom Telegraph Company, has been appointed to be Manager and Secretary, *vice* Mr. Weaver.

The preparations for the expedition of the first section of cable to be laid by the Great Northern Telegraph (China and Japan extension) Company are making progress. The Danish frigate *Tordenskjold* has arrived in the Thames, where she will take on board a portion of the cable, for the remainder of which the company have chartered the steamers *Cella* and *Great Northern*. About 400 miles were finished in the tanks the middle of April,

and the remainder will be completed by the time the ships are fitted up and ready to receive their cargoes. It is expected that before the end of May the whole will be on its way to China.

Prof. Rood on the Electric Spark.

AS a result of various experiments, Prof. Rood finds the discharge from a Leyden jar, charged by an induction coil, is composed of three parts of successive acts—a white flash, a brownish yellow gleam, and a fainter and more lasting glow, which, with brass electrodes is green, and, with platina, gray in color. The duration of the entire phenomena is from seventeen to fifty millionths of a second. The duration of the white and yellow light together is six to eight millionths, and that of the white flash alone less than twenty-four hundred millionths of a second.

Lighting Up Beacons and Buoys by Electricity.

PROF. FLEMING YENKIN has discovered and patented a new method of lighting the beacons and buoys on the sea coast by electricity, giving a bright, permanent and unmistakable light to guide the mariner, and preserve him from treacherous rocks and shoals. The light is produced by a rapid succession of sparks, due to successive charges and discharges of a condenser situated upon the beacon or buoy. This is charged directly with a voltaic battery, without the intervention of an induction coil. The communication is made by means of submarine wires running from the shore to the beacon or buoy, and can be operated thoroughly by parties on shore. The invention is considered in all respects practicable—and it is certainly to be hoped that it is so—and we hope to see it adopted on the dangerous parts of our coast, as one of the means of rendering less the dangers of the seas.

Civilizing Influence of Telegraphy.

So another chain of civilization has been wrought, and of a morning we know what was done in Bombay the previous night. What would our forefathers say if they could visit the earth once more and claim their estates? In the morning the President of the United States exchanged compliments with the Queen of England, and in a couple of hours the heads of every nation in the world could join, if they pleased, in the international greeting. The value of the Atlantic cable has already been made abundantly evident; and that the Indian Submarine Cable will be of proportionate importance no one can dispute. In fact, all methods of communication which can closer connect the various branches of the human family must be of paramount importance.—*European Mail*.

BORN.

In Philadelphia, May 2, to C. G. DEMOLL, a son.

New Patents.

For the week ending May 3, and each bearing that date.

No. 102,561.—PRINTING TELEGRAPH INSTRUMENT. Landy Tunstall Lindsey, Jackson, Tenn.

Claim.—1. The combination of the series of levers A B C D, &c., arranged in a circle and properly supported in a frame with the arm a, anvil m, and rotating shaft F, in the manner and for the purpose set forth.

2. Extending the wires connecting with the points i and i' in the relay magnet M, to plate d and platina point 3, for the purpose of keeping the circuit through the magnet O closed after the contact of the points i and i', substantially as described.

3. The brake-wheel L, so arranged as to break the circuit through the magnet O, after the contact of the type wheel and impression roller has been maintained long enough to move the strip of paper for a distance sufficient to form a space between the letters, in the manner substantially as set forth.

4. The combination of the printing telegraph instrument with the electro-magnetic motor, in the manner and for the purpose described.

5. The combination of the slotted plate k, or its equivalent, with the arms and pawls operating the ratchet wheel, as described.

No. 102,562.—ELECTRO-MAGNETIC MOTOR. Landy Tunstall Lindsey, Jackson, Tenn.

Claim.—1. The arrangement of a metal slide, f, properly supported in a fixed or movable frame, E, between adjusting screw points D D', on which to successively strike, when driven in either direction by a lever, O, that is caused to vibrate by the alternate action of two magnets, which successively control an armature fixed thereon—either screw point, when in contact with the slide, representing such a connection as it may be desirable for it to form.

2. The introduction of such connections as will insure an automatic and unintermitting motion of the lever O, by joining together a terminal wire from each of the magnets M M', and extending a wire connection from their junction to, and connecting it with one of the posts B, thereby establishing metallic communication between these magnets and the slide i; extending the remaining terminal wire of magnet M, via and connecting it with adjusting screw D, to binding screw N, where it unites with one pole of a battery; extending the remaining terminal wire of magnet M', via and connecting it with adjusting screw D', to binding screw N', where it unites with the other pole of a battery, thus completing the metallic circuit of the battery, and including the coils of both magnets therein—the alternations of the current through the coils of the magnets, and their successive effect in attracting the lever thereto, being accomplished as hereinbefore described, and for the purpose set forth.



SATURDAY, MAY 7, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D.C.
 Vice-President..W. O. LEWIS....New York.
 Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.
 Recording Sec..W. W. BURHANS...Box 6010, P. O., New York.
 Corres. Sec....F. L. POPE.....Box 6010 P. O., N. Y.

(Removal.)

THE Office of THE TELEGRAPHER has been removed from Room 49 to Room 51, the front room on the same floor as that previously occupied, at Nos. 78 and 80 Broadway.

Particular Notice.

ALL letters, communications, etc., sent by mail to THE TELEGRAPHER or its Editor, should be addressed to Box 6010, Post-office, to insure prompt delivery. Compliance with this request is important, as mail matter is not delivered from the box unless so addressed.

HONESTY THE BEST POLICY.

IN no business is it more certainly true that honesty is the best policy than that of telegraphy. The managers and operators of telegraph lines and offices occupy confidential relations to their customers and the public. The latter are, to a great extent, compelled to rely upon the honesty and good faith of the former. Interests of vast importance are necessarily confided to them constantly, with the understanding that they shall be dealt with fairly and honorably. A betrayal of the trust may often work injuries and injustice which exemplary damages cannot compensate. We are proud to know that in most particulars this trust is honorably fulfilled. As a rule, violations of confidence, and dishonesty on the part of telegraphers towards their customers, are rare and exceptional.

In one respect, however, there is reason to believe that some telegraph managers do not treat their patrons with the honesty and fairness which should characterize their dealings. This exception, too, is one which cannot fail to work serious injury eventually to the business of the company or office which practices it. It is a fraud easily discovered, and by a constant patron of a line sure to be speedily unearthed, resulting in the loss of his confidence and patronage. We refer to the practice once very general upon telegraph lines, but how, we hope, generally falling into disuse, of taking business when the wires are down, or not in condition to insure transmission within a reasonable time, and concealing that fact from the senders, in order to prevent them from taking their business to rival or competing lines. In this way the transmission of messages is often delayed until they become either valueless or their value is greatly impaired, and sometimes great damage is caused by such delay.

In the early days of telegraphing, before the public had become accustomed to reasonable certainty and celerity in the transmission of their business, this swindle was, if discovered, vigorously denounced, but submitted to as one of the things which all, or nearly all lines practiced, and for which there was no remedy other than holding

them pecuniarily responsible for the damages caused thereby. As time passed, however, and the business became systematized and telegraphic communication more reliable, a continuance of this reprehensible practice was found not only morally but pecuniarily damaging. It was seen to be so, and for a time the practice was generally abandoned by respectable telegraph companies. We regret to learn that, in the competition which has of late existed, this dishonesty is again coming into favor. A consideration of its effects must, we are confident, convince any intelligent man of its inexpediency in a business point of view, without reference to its moral turpitude.

It is dishonest and a swindle to receive money for a service which there is little or no probability of being performed within the ordinary time required for such service. It is dishonest to conceal the fact that for some reason business cannot be despatched as promised, either directly or impliedly. If a message is received for transmission, it is, unless otherwise stated, understood that the line is in working condition, and that no unusual delay will be experienced in its delivery. If the line is not in working order, and the fact is concealed, the receipt of the despatch and of the pay is an outrage.

The effect upon the business of any office or line which resorts to such practices cannot but be very injurious. Confidence once destroyed is very difficult to re-establish, and a person once deceived in such matters must ever after regard with suspicion and distrust any statements or assurances from the same source.

The true policy of all telegraph companies is to insist that their employes shall treat customers with perfect fairness and candor. If the wires are out of order, or for any other reason there is likely to be delay in the transmission of business, the fact should be made known, or if that is not desirable, the business declined without explanation. In this way customers will soon learn to rely with confidence upon the representations made to them, and will know that they are not likely to be victimized for the sake of securing the price of one or half a dozen despatches. In this matter there is no doubt but that honesty is the best policy.

We do not, of course, in these remarks refer to occasional instances where communication is interrupted and business on hand is unavoidably delayed. In such cases, if used to honest treatment, and assured that every possible effort had been made to perform the work, customers may easily be satisfied. In such cases, however, if another line can do the business properly, it should be promptly transferred, or, where practicable, returned to the sender with an explanation of the circumstances. We hope that, as a matter of honor and honesty, and as a pecuniary injury to all parties, offices and companies with whom this petty swindle still prevails will abandon it at once and inaugurate such a fair and honorable course towards their customers as shall secure permanently their patronage.

To the Friends of the Telegraphers' Organ.

WE would call the attention of the friends of THE TELEGRAPHER to the necessity which exists of not only maintaining but of increasing its circulation. The whole power of a powerful corporation, which employs three quarters of the operators in this country, is being actively and steadily used to destroy its circulation, because it has and does consistently and persistently defend and maintain the rights of telegraphic employes, and expose and denounce the attempts to oppress and degrade them. The minions of this corporation openly and exultantly proclaim that the days of the paper are numbered, and that it shall soon cease to exist. They realize that while it is published telegraph employes can never be brought into such a state of subjugation as they desire to reduce them to.

So far the telegraphers of the country have nobly responded to our appeals to them for aid and support. We now call upon them to renew their exertions in its be-

half. We have offered liberal premiums as an extra inducement to labor for it. They are far more interested in its success and maintenance than we are. Let every telegrapher who desires to be an independent, self-respecting and respected member of an honorable profession, rather than the hirelings of soulless employers, upon such terms and conditions as they may dictate, see to it that all telegraphers within the reach of their influence at once enter their names upon the subscription list of THE TELEGRAPHER. Let every telegraphic employe friendly to an independent telegraphic organ at once constitute himself or herself an agent to solicit and forward subscriptions.

A Valuable Improvement in the Automatic Telegraph.

ONE of the principal objections urged against the electro-chemical telegraph, as well as against the automatic system, which almost necessarily employs the electro-chemical process for recording communications, consists in the fact that it has been found, heretofore, impracticable to transmit to a number of stations on the same line simultaneously, as the current is weakened to too great an extent by the resistance offered by the chemical paper. In the late report of President ORTÖN to the stockholders of the Western Union Company the following passage occurs:

"The automatic system, however, is especially unsuited for the transmission of press reports, as this process enables but one station to receive at the same time, while the Morse wires can be connected throughout the country, and the news sent to every office by a single manipulation."

This objection to the automatic and chemical telegraph has at length been entirely overcome by the novel and ingenious combination of circuits invented by Mr. FREDERICK J. GRACE, and for which a patent was granted on the 26th of April, the claims of which we published last week.

It is well known that, in working by the chemical system, the marking point or stylus must always be connected with the positive pole of the battery, and the prepared paper with the earth, or the negative pole of the battery. In Mr. GRACE's invention each receiving station is provided with a main battery, whose positive pole is connected with the earth, while its negative pole communicates with the prepared paper. The stylus or marking point of the instrument at each station is attached directly to the line wire. This wire goes directly to the key, and thence to ground at the transmitting station, no battery being used at this point. Therefore, when the key is closed, the whole line becomes in effect a ground wire, and the circuit of the battery at each station is completed independently through this common conductor. It is obvious that any number of stations may be arranged in this manner, and each will act as if there were no other station upon the line. We are inclined to think that this simple and beautiful invention effectually disposes of one bugbear, which has been used with considerable effect by the opponents of automatic telegraphy. Further information in regard to this system may be obtained by addressing the inventor, F. J. GRACE, at No. 22 Broad street, New York City.

The Proposed Submarine Cable to Holland.

THE *Annales du Genie Civil* publishes the following as the terms of the concession granted by the Government of the Hague to Mr. Wm. Cornell Jewett, for laying and working a telegraph cable between Holland and the United States: Mr. Jewett is to land his cable at a point on the Dutch coast selected by the Minister of the Interior; he is bound to maintain the communication all along the line, to repair accidents in the shortest possible time, and in case the delay should exceed a year, the Government reserves to itself the right of re-establishing the line at the cost of the *concessionaire*. The despatches will be subjected to a tax not higher than that charged by the Netherlands Government on telegraphic messages generally. Mr. Jewett is to deposit a sum equal to £8,480, which is to be returned to him provided the line is in

working order within two years from the signature of the contract, and after it has been in use for six months without interruption. Mr. Jewett receives neither subsidy nor guarantee, and the Netherlands Government reserves to itself the right to suspend communication by the line when it pleases to do so, without being subject to the payment of any indemnity. It is not actually stated that the concession is exclusive.

It is on this concession that Mr. JEWETT asks Congress to grant him a charter, and to provide for the issue or endorsement by the Government of bonds to the amount of ten millions of dollars, with the proceeds of which to lay the cable. The sublime impudence of this request is relieved by its absurdity, and the confidence which it exhibits in the gullibility of Congress. Mr. JEWETT may perhaps amuse himself, and, if possible, fool foreign governments into absurd concessions, as well as in any other way, but it is to be hoped that the Government of the Hague has got that £8,480 deposit in cash. If so, it will never be called upon to return it under the terms of the concession.

Quick Method of Learning the Morse Alphabet.

We have received from Mr. GEORGE LITTLE a very ingenious, and, to learners, useful card, by which a practical knowledge of the Morse alphabet may be readily and quickly obtained. The letters are classified, and in a small space examples are given to illustrate and impress his system upon the student's mind.

Prof. Morse's Report on the Paris Exposition.

MR. D. VAN NOSTRAND, publisher and bookseller, of No. 23 Murray street, has a few copies of the valuable report on the telegraph at the Paris Exposition, made by Prof. MORSE, Commissioner of the United States, for sale. This report is in great demand and very difficult to obtain, and parties desiring to possess copies should apply at once in order to secure them.

The New Telegraph Line to the Pacific.

THE Great Western Telegraph Company completed its line to Omaha, Nebraska, on Saturday last, and made the connection with the wires of the Union Pacific Railroad, which have been incorporated with those of the Atlantic and Pacific Telegraph Company, and at Ogden connect, by contract with the Central Pacific Railroad, to California; the Atlantic and Pacific Telegraph Company also connects with the Great Western Telegraph Company at Chicago, and thus the route from the Atlantic to the Pacific is completed.

Mr. W. D. Snow, who, as the representative of the Atlantic and Pacific Telegraph Company, has been for some weeks past in California, has, on behalf of that company, concluded exclusive contracts with the following roads for the use of their wires: The Union and Central Pacific, Western Pacific, San Francisco and San Jose, San Francisco and Oakland, Oakland and Alameda, San Juan Valley, and California and Oregon Railroads. This includes all the railroads on the Pacific Coast, except one of 150 miles in length, terminating at the City of Valejo. The operation of these contracts transfers the services of over two hundred operators from the Western Union Telegraph Company to the new combination.

After a struggle of ten years the Western Union monopoly of the California telegraph business is at length broken. The prejudice against that monopoly on the Pacific Coast is so great that a large proportion of the business will doubtless be at once diverted to the new route, and if properly performed, will be permanently retained by it. This will necessitate an immediate and considerable increase of facilities on the part of the Atlantic and Pacific and the Great Western Companies.

GREAT REDUCTION

IN PRICES OF

TELEGRAPH WIRE!

Owing to the decline in gold, and other circumstances, we are now supplying our superior quality of

GALVANIZED WIRE

at prices much below former rates. Parties desiring the Best Wire at the Lowest Price should call upon us. Having sold over 6,000 miles of this Wire during the past eight months, to the satisfaction of the parties purchasing, we know whereof we are speaking.

L. G. TILLOTSON & CO.,
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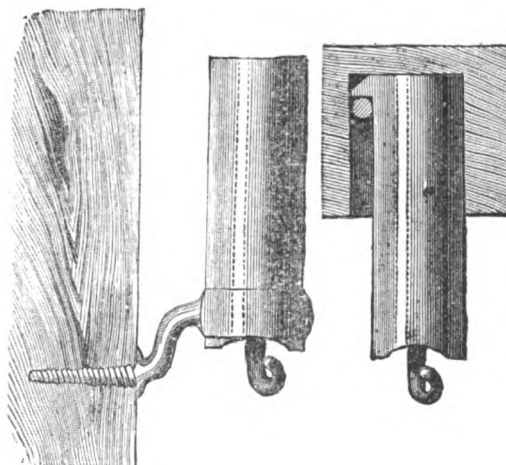
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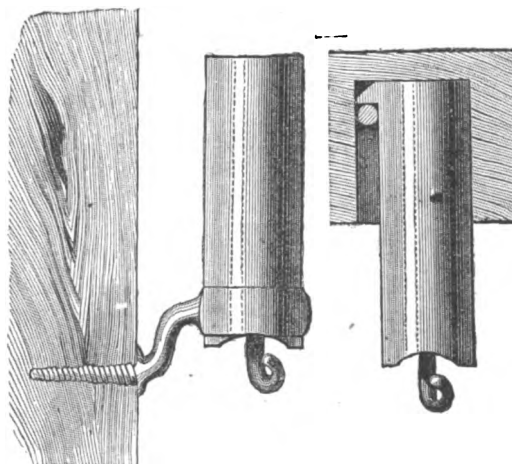
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OF

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It has been the custom of the present publisher and editor of "THE TELEGRAPHER"

to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to

INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES AND INJUSTICE practised by them upon its employees, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

The President of that Company, however, distinctly disavows this action, and says, in a communication to the editor of THE TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S) discontinuance and discountenance a test of competency for our service."

It will be seen, therefore, that this movement is one incited on the part of certain of the subordinate officials of that Company by personal spite and chagrin, because the paper has remained UNSWERVINGLY FAITHFUL to the interests of the Practical Telegraphers of the country, and could not be used for the personal ends of these disgruntled officials.

It remains to be seen whether the Practical Telegraphers of this country CAN BE RELIED UPON to stand by those who seek to secure to them JUSTICE AND FAIR TREATMENT.

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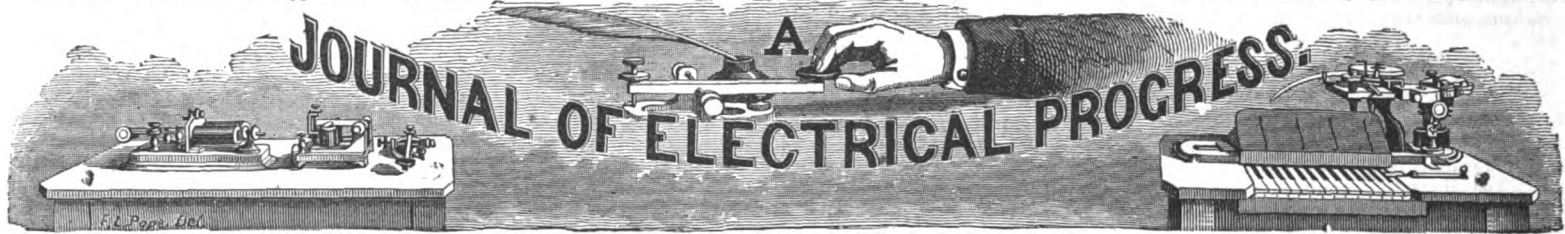
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THE TELEGRAPHER.



Vol. VI.—No. 38.

New York, Saturday, May 14, 1870.

Whole No. 200.

[From the Railroad Gazette.]

THE TELEGRAPH AND ITS MODERN APPLICATIONS.

By GEORGE H. BLISS.

THE utility of the telegraph in connection with railway service is rapidly becoming better appreciated. Like the printing press and the use of steam it has sprung into a position of commanding importance in spite of prejudice and every obstacle. When Professor Morse appealed to the nation for assistance in the construction of an experimental line, and to the public for support, he was met with ridicule and prediction of failure from many learned heads, whose prophetic foresight has since been proven thoroughly visionary. When a superintendent on the Erie Railway first attempted to suspend a time card rule, and run a train by telegraph, the conductor absolutely refused to obey, mistrusting the sanity of his superior and the correctness of the despatch. This lack of confidence has given way to an implicit reliance, extending into the most detailed management. The telegraph has become the nerve, bringing intelligence to the brain power that moves the road, warning of danger, retrieving disaster, and causing all things to move forward with harmony and purpose. It has rendered possible the manipulation of the large railway corporations of the country, bringing within the iron grasp of a single mind the utmost minutiae from points a thousand miles distant, with more certainty and exactness than under the old system could be done on a single hundred miles of road. By its engines and cars are made available to their fullest extent. Take a case where some train having a right to the track is delayed and its detention holds others in check. The Train Despatcher is master of the situation, and, having full knowledge of the circumstances, will move each train from station to station, arranging new places of meeting so that the least possible time is lost, and with as much freedom as a chess player can pass his piece from square to square on his board. Notwithstanding this manifest benefit, there are prominent roads which only within a few months have made any attempt to secure the advantages within their reach in this direction. In busy seasons, when cars are worth from fifty to one hundred and fifty dollars per day, immense trains of empty freight cars leave Chicago daily, the destination of not a single car being known; but while in transit, by means of the telegraph these are distributed to the points where the demand is most pressing. A just estimate of the saving effected in this manner would astonish many who have never given the subject the thought it deserves.

If a bridge is carried away, before it fairly leaves the abutment your civil engineer is telegraphing his specifications to half-a-dozen shops, and by the time the loss would be known formerly, trains are hastening with completed material for the new structure. The management of the passenger and freight business in all matters requiring speed, and, in fact, the concentration of effort at the right time and place in all departments, depend equally on the telegraph. In such high esteem is the telegraph held by some railway officials that they prefer a single track road with the telegraph to a double track without, and, when the relative cost is considered, the tribute is a high one.

Such being some of the benefits of an efficient telegraph system, how important it is that every railway company should possess the best that a reasonable outlay will obtain. The attempts in this direction have, many of them, fallen far short of the desired end. Some have failed from an error of organization, some from puerile economy, and some from gross ignorance. Electricity is the most subtle of agencies, governed by laws which must be closely studied, and tested by experience in order to be mastered. It is not strange, when lines are placed under control of persons having only a surface

knowledge, or in the hands of those whose other duties usurp the larger portion of their attention, that they fail to give satisfactory service. It cannot be expected that wires will work well when constructed in violation of the principle that the means must be adapted to the desired end. When companies invest fifty thousand dollars in a fancy engine, and thirty thousand in a directors' car, and deny the few thousands necessary to equip their roads with first class telegraph facilities, their wisdom may justly be considered questionable.

I appeal to the fraternity if it is not absurd that a severe rain should render our land wires useless for distances over one hundred miles, and in many cases much less, when wires can be stretched from shore to shore beneath an ocean of moisture, and worked with a battery no larger than a lady's thimble. True, the obstacles of the land lines are somewhat different, but there is nothing in their way which cannot be overcome by a judicious expenditure of money. Is it not a cause for regret that, while an American originated the first practical system of telegraphing, which is now in use in nine tenths of the existing lines, in scientific attainment, investigation and adaptation, we are far surpassed by the English and other Europeans. They have long used apparatus by the means of which, so to speak, electricity can be weighed, measured and gauged, determining the relative merit and capacity of wires, instruments and batteries, resulting in a perfection unknown among us. For the lack of this attainable knowledge the telegraph authorities in this country have made many ludicrous and expensive blunders. A plain glass insulator was early in use, but was deemed objectionable on account of breakage. To remedy this the Wade insulator, which was constructed by covering a modified form of glass with a tar-saturated wooden cap, was introduced, at more than double the cost. Many hundred miles of lines were thus insulated, when the discovery was made that the wooden caps acted as a sponge to retain moisture, the great enemy of insulation, while any concussion broke the glass, destroying all insulating power, but still leaving the insulator externally in perfect condition. The glass in many of these insulators was broken by the heat of the tar, in the process of manufacture, and they were worthless from the start. The result has been that during the last two years thousands of these insulators have been displaced, and plain glass insulators substituted, at no inconsiderable expense. A few practical and scientific tests might have demonstrated the faults of this insulator before it had ever been put into actual use. It is the European custom to test every insulator thoroughly before putting it up, and this inspection leads to the rejection of a large percentage—while we, with culpable negligence, put them into lines, indifferent as to their real condition, if externally sound.

During the past few years the telegraph community has been running wild on the subject of resistance. Relays have been manufactured having a resistance as high as one hundred and fifty miles, taking as a standard No. 9 iron wire perfectly insulated, and many more, approximating this figure, have been made. These enormous resistances, placed in lines without reference to the size or length of the conductor, have rendered excessive battery power necessary, and caused the current to escape wherever the insulation showed the slightest defect. It is now conceded that thirty miles is a maximum resistance for a relay, and that on many wires a much lighter resistance is sufficient.

Little attention has been paid to the size and quality of conductors. To force a current of electricity over a small wire is like trying to compel a large stream of water to pass through an inadequate pipe. What an eighty-pound rail is to a sixty-pound a No. 7 is to a No. 9 conductor. A No. 9 galvanized wire is in common use here, though a few companies, like the Chicago, Burlington & Quincy, are using a No. 7. This does not equal many of the

foreign lines, where No. 4 is used for long wires, after being subjected to the severest tests. One of the most simple tests is to make an ordinary connection, then disconnect, and again connect, twisting it in the opposite direction to the first splice. Probably not one tenth of our wire would stand such a trial. The three great requisites of a good telegraph line are strength, conductivity and insulation. No material ought to be used but the best, and great care should be taken in proportioning it.

The idea has been suggested that something could be gained by substituting a twenty-foot pole with cross-arms for the twenty-five-foot pole with bracket insulators. By spreading the wire on cross-arms they could be raised to the same average height, and the leverage upon the pole by winds and sleet greatly diminished, while there would be less liability to crosses than with the wires near the pole and directly under each other. The upper surface of every cross-arm should be beveled.

The character of a conductor depends largely upon its size and quality, so that the questions of strength and conductivity are closely linked together. Any improvement in one favorably influences the other. The most perfect insulator is always the one to buy, no matter what it costs. A line may be strong as adamant and a thoroughly good conductor, but if the insulation is defective it will not be serviceable. Happily, in the recent discovery of paraffine—the best known insulating substance—the combination of copper and steel for a conductor, the introduction of delicate testing apparatus, and the awakened interest in telegraphic circles upon the more advanced problems of the profession, a new dawn is breaking upon telegraphy in this country. The invention of the system of double transmission, by which messages can be sent in both directions at the same time on the same wire, will largely increase the capacity of lines, and is significant of the era of cheaper telegraphing.

If the American people ever commit themselves to the folly of presuming that a Government monopoly, under the name of a Postal Telegraph, can transact the business to better advantage than competing private enterprises, no success will be obtained without the coöperation of railroads. A free and independent telegraph line is a necessity to every road, which can maintain it cheaper and better than any other party. By contracts with railways, based upon the mail service plan, the local business could be done and through wires provided for by rental, so that the Government would be obliged to invest only the comparatively insignificant amount needed for city wires. It is nonsense to say that the Government could not command the best telegraph talent of the country, and a slur upon our institutions to believe that such a department could not be managed with a degree of honesty commensurate with that of the community at large.

The application of electricity to dial instruments, suitable for the use of business firms on short lines, to hotel annunciators, to fire and burglar alarms, for dwellings and cities, to illuminating and medical purposes, and to electric brakes, all testify to the merits of this invaluable agency, which pervades every animate and inanimate thing.

I cannot close without calling attention to the telegraph lines recently constructed in Chicago, which are the pride of every telegrapher, and ought to be of every citizen. The size of the poles, the use of Brooks' paraffine insulator, the character of the work and general plan, are worthy of the highest commendation. It may be questioned whether anything has been gained in strength and symmetry by putting the largest arm at the top, and thus reversing Nature's method of growing a tree; but, until our wires shall be introduced into the city underground, these lines will stand, and hold a first rank among the city lines of the nation.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., May 11.

TO THE EDITOR OF THE TELEGRAPHER.

THERE has been an utter stagnation of interest, as regards telegraph matters in Congress, since my last communication. The House adjourned over from Wednesday of last week to Monday, to afford an opportunity to prepare the hall for the summer session. On Monday there was no quorum present, and since then nothing relative to the telegraph has been brought up. In the Senate, also, telegraph matters have been ignored, and there is really nothing to report.

It is understood that Mr. Washburne will, on making his report from the Special Committee on the Telegraph, move its postponement until the first Monday of December next.

On Monday last the House Committee on Public Lands, to which Mr. Cyrus W. Fields' Pacific Submarine Telegraph bill was referred, considered the subject, but did not decide to report in favor of the grant of land asked for, but agreed to report the bill back to the House, and recommend its reference to the Committee on Foreign Affairs, to which it properly belongs.

On Tuesday, in the House, on motion of Mr. Ketchum, by unanimous consent the Committee on Public Lands was discharged from the further consideration of the bill to incorporate the Pacific Submarine Telegraph Company, etc., and it was referred to the Committee on Foreign Affairs.

On Tuesday Mr. Field appeared before the Senate Committee on Foreign Relations, in relation to the laying of the Pacific Submarine Cable. He went at length into the subject, explaining the feasible routes, of which he considered there are but two—that by the Aleutian Islands, and the other by the Sandwich Islands. He stated that there were many advantages in favor of the Aleutian route, as there being a number of landing places for the cable, the necessity of traversing enormous distances with unbroken stretches of cable are avoided, and it is also shorter than the other. On the other hand, the Sandwich Island route has an importance, commercially, not possessed by the other, and in spite of the objections there are many inducements to adopt it.

Much interest was manifested by the committee in Mr. Fields' statements, and they will give him another hearing on the subject before making their report.

To-day the House Special Committee on the Telegraph held another meeting, and President Orton, of the Western Union Company, appeared and addressed the Committee at length. He referred to the experience of a Government telegraph in England as conclusive against the project of putting the lines under the management of the Post-office department. He made a forcible and effective argument against Government intervention in the business, but it contained no very new points in addition to those previously made by him. When he had finished Mr. Washburne presented a letter from Mr. Scudamore, Secretary of the British Post-office Department, of April 19th, in which it is claimed that the statements in reference to the blunders, delays, etc., were greatly exaggerated, and that the system is now working well, and generally to public satisfaction.

The Bankers and Brokers' Telegraph Company are distributing cards and circulars through the city, giving notice of the plan of cooperation on which it is now worked, and calling on the public for support. So far the plan is a decided success.

The Southern Atlantic Telegraph line has been ready for business at Alexandria for some days, but is waiting for instruments. The line is up to Charlottesville, Va., and is now being constructed from Charlottesville to Richmond. CAPITOL.

A Defence of the Western Union Officials at Chicago.

CHICAGO, April 25th.

TO THE EDITOR OF THE TELEGRAPHER.

FOR some time past I have noticed in THE TELEGRAPHER occasional letters from anonymous correspondents, dated Chicago, which have contained statements relative to alleged mismanagement and oppression in this office, and insinuations as to the character of certain officers.

In the last number of your paper the correspondent who signs "Operator" renews his attacks. They remind me of a boy throwing stones from behind a fence. It would relieve the state of his mind to imagine himself pursued by a fleet-footed canine, whose attack, though from the rear, would prove none the less exciting if not painful.

As one of the subscribers to THE TELEGRAPHER, without expressing my approval of its course, permit me to state that I continue to receive it at the office in this city, statements of its interdiction to the contrary notwithstanding.

At the risk of incurring the disapproval of my superior officers, for attempting to defend them from these attacks, I will say, briefly, in my opinion, from what I have been able to learn of other offices in this country, that the Western Union office at Chicago ranks second to none; and while, as is acknowledged by its worthy President, the telegraph has not reached its perfection, nowhere is there found greater experience, efficiency and executive ability than in the management of the Central Division of this Company. Should there nothing else shield him from base attacks and insinuations, the remembrance of his quiet but eminently useful services during the late war, when he was so intimately associated with the immortal Lincoln, ought to silence tongue and pen from speaking malice against the name of Anson Stager. I could go on in defence of others, but trust that what is written will be sufficient to disarm the prejudices of my brother and sister operators.

In conclusion, let me ask, is there not some fault on our part? Are we as faithful and attentive to the rules of our company as duty requires?

Often those who are the most traduced are the most willing to acknowledge their faults.

Allow me to suggest that what we want, as a telegraphic fraternity, is less looking on the dark and more on the bright side of the picture. The mind may become so morbidly affected by real or supposed grievances as to be oblivious of the benefits we enjoy as operators of one of the greatest of modern inventions.

As a means to alleviate "the ills which our flesh is heir to," and save our bodies, minds and souls, let us exercise more, study something beneficial, and, above all, attend upon the consolations of true religion.

J. NEWTON CRITTENTON.

Reminiscences of the Strike.

CHICAGO, April 27th.

TO THE EDITOR OF THE TELEGRAPHER.

NOW that matters have generally settled among the profession, we can look back with a great deal of interest (barring the average reduction of ten per cent., vide the Statement of the Central Division) upon the days of the strike. There were many amusing features connected with it.

All the Chicago operators will remember the startled look and frightful pallor which bespread the massive face of the W. U. Chief when our committeeman broke the news of our intended movement. His is a countenance best described as that of a good liver, and when that unusual look came over him, and he started on a run for Room 19 (Wilson's) like one possessed, with all our anxiety many of us were forced to laugh outright. It seems as if they must have known something was to happen, for the night men were all around at eight that eventful morning. Whispers were being bandied about, etc., while some of the more nervous ones took off and replaced their coats repeatedly. I look back with a funny sort of feeling to the moment when the body of strikers formed a double line at the foot of the staircase, and greeted the six ladies who joined us with rousing cheers, congratulations, etc.; and here let me say that those ladies were among the staunchest members we had—setting a worthy example to those men (?) who had not the stamina to wait for an absolution from their oath before breaking ranks.

The meetings, too, will be long remembered. The cheers which greeted Pope's manifestos, Nichol's (Indianapolis), Spink's (Cincinnati), McCoy's (Pittsburg), "spiteful" Shaft's and Matlock's (Davenport) famous "Firm as God's laws," "Everlasting hills," etc., etc., in fact anything, to the sympathy of a P. & A. messenger, was enough to rouse a fearful degree of enthusiasm. On the fourth day, when it was known that Matlock had been down on his knees, with tears in his eyes, to Stager, I've no idea that the army in Flanders could have equalled the frightful yelling in the rooms. To say the least, if any attention is paid in the next world to telegraph operators, his fate must be sealed.

When, after the tenth day, repeatedly came from all quarters the news, "Same old story," "all firm here," and finally that "Boston gone back," "Philadelphia flocking like sheep to W. U. office," and hints, then positive evidence of squawking in our own ranks, and when the boys found it lively work to skirmish a matinee ticket, then was the time that "tried men's souls."

Many will remember unique expressions by Dutch Bill and others, in regard to means of living before giving up; songs, walk-arounds, Shoo-Fly, by Fatty and others, which served to keep up our spirits, only to experience a dreadful reaction when Pope's final edict was received.

I have seen strikers from the Pacific Coast to New York, and nearly every other striking point, and none seem to repine, to any extent, over their fate. They look at it as somewhat unfortunate, yet pride themselves on having made as staunch a fight as circumstances would permit, with no instance of petty maliciousness. Having made the move on principle, and being defeated, they are disposed to accept the situation.

I hear of no great complaints of the W. U. management here. I have conversed with several of the ladies who were taken back, and all seem to be moderately satisfied, though many changes are taking place. "We are all in the same boat, and must land at the same spot."

STROKE OAR.

PERSONALS.

Both the Western Union and Atlantic and Pacific offices, in the State Capital at Albany, N. Y., have been closed, on the adjournment of the Legislature, and Messrs. JOHN GUY and S. J. WHITE have resumed their old positions in the main offices, the former in the Western Union and the latter in the Atlantic and Pacific office.

Mr. F. A. GRIMES has resigned his position in the Western Union, Albany, N. Y., office, and accepted one in the office of the Albany Sunday Morning Press.

Mr. JOHN FULLER, an old and widely known telegrapher, and for some years past manager of the W. U. Company's Oswego, N. Y., office, has retired from telegraphing, and accepted the position of business manager of the Oswego Daily Press, in which paper he is also a partner.

Mr. H. A. TUTTLE, late operator in the Oswego office, succeeds Mr. FULLER in the managership of that office.

Mr. GEO. HALL, late of 21 Wall street, New York, Western Union office, has accepted the position made vacant by Mr. TUTTLE's promotion.

Miss ANNIE MYERS has resigned her position in the Western Union Co.'s New Hamburg, N. Y., office, on account of ill health.

Miss KITTIE CANNON, of State Line, Mass., is her successor.

Mr. H. L. BUTTOLPH, night operator at Bitter Creek, of the Union Pacific Railroad, has been transferred to Red Desert Station, of the same road, as day operator.

Mr. J. H. LAFLIN, operator at Red Desert, U. P. R. R., has been appointed agent and operator at Creston.

Mr. A. D. DIBBLE, agent and operator at Creston, has been transferred to Bitter Creek.

Mr. C. H. BUCK, formerly agent and operator at Bitter Creek, U. P. R. R., has resigned, and leaves the road to engage in other business in Southern Kansas.

Mr. GEO. A. LANCE has resigned his position in the W. U. Albany, N. Y., office, and accepted one in the Buffalo, N. Y., office, of the same company.

Mr. E. H. THRESHER, late of Rochester, N. Y., is filling the position in Albany vacated by Mr. LANCE.

Mr. ORVILLE D. LADOW, late of the W. U. Co.'s Ballston, N. Y., office, has accepted a position in the A. and P. Co.'s Albany, N. Y. office.

Mr. ANDREW BOOTH, who has been resting and recruiting his health for several months past, has returned to his old position as clerk for the R. & S. R. R., at Ballston. He is also operator at the same place.

The Darien Exploring Expedition.

THE United States steamship Nipsic, of the Darien Exploring Expedition, arrived at Aspinwall on the morning of the 1st instant from Caledonia Bay. From February 22d to April 22d one telegraph line seven and a half miles and another of eight miles long were put up and used. The telegraph wire on the Sucubti was taken down on the 14th April, and solitude again reigned at Nipsic Point.

The expedition will proceed to explore the San Blas route.

Private advices received in this city from the expedition, dated on board the United States steamship Guard, off San Blas, Isthmus of Panama, April 26th, state that Messrs. Clarke, Gustin and McDowell, the telegraphers connected with it, were in good health and spirits, and desire to be kindly remembered to their numerous friends and acquaintances at home.

The telegraph has proved a most valuable aid in the work of the expedition. Com. Selfridge says that he never had a proper appreciation of the telegraph until he realized its benefit in this expedition. It has more than met his most sanguine expectations. Through the efforts of the telegraph corps he was kept in constant communication with the head of the line of exploration.

The telegraph line was constructed as the exploring parties advanced, in the best order, and never lost an hour

by any kind of interruption. As fast as the route was cut and surveyed the figures were telegraphed back to the ship, and platted by the draughtsmen, and thereby the commander of the expedition was enabled to keep posted, foot by foot, of all the line cut and surveyed. The telegraph has delighted the entire expedition, proving a source of great interest to all. As fast as a route is sufficiently surveyed and abandoned the wire is taken down, coiled up and used again on another route. The wire which is now being put up on the San Blas route has been used on two previous lines. It is believed that the telegraph corps will not expend over five hundred dollars' worth of material on the entire work of the expedition.

The members of the expedition justly complain that the Government has not furnished proper mail facilities to and from Aspinwall, they having, in every instance, to hire and pay out of their own pockets from thirty to seventy dollars per trip for schooners, to bring down and carry back their mail. In some instances they have been indebted to the courtesy of trading schooners for bringing their letters and papers from Aspinwall. When the expedition left New York it was understood that ample mail facilities would be furnished by the Government.

THE TELEGRAPH.

(By Cable.)

INTERRUPTION OF TELEGRAPH LINES.

LONDON, May 11.—The weather to-day has been exceedingly stormy. The telegraph lines, especially those connected with the Atlantic cable, have been interrupted, and business, public and private, has been greatly delayed.

FOREIGN TELEGRAPHIC NOTES.

THE public adjudication of the concession for the construction of telegraphic lines between England, Portugal and Gibraltar, took place on April 4. The Minister of Public Works announced that the concession has been definitively granted to M. Jules Despocher, the representative of the Falmouth, Gibraltar and Malta Telegraph Company.

The "Great Oceanic Telegraph Company" was summoned on April 1, at the Mansion House, London, for having contravened the provision of the Joint Stock Companies' Act relating to the possession of a registered office. Some curious evidence was given, showing the state of the Company's banking account; for, although the undertaking was formed "to provide cheaper, and more direct telegraph communication generally," the largest amount standing to the credit of the company at any time was less than £150. Most of the money paid out was for advertisements. The Lord Mayor inflicted a penalty of £25 and the costs.

A special general meeting of the proprietors of the Atlantic Telegraph Company was held on April 1, for the purpose of obtaining the sanction of the proprietors to a bill for the arrangements entered into with the French Telegraph Company, the Newfoundland Telegraph Company, and other companies, and for the conversion of the stock into Anglo-American stock. Mr. L. M. Rait, the chairman of the company, presided, and said the result had fully justified the course adopted. It was most desirable that the bill should pass this year, so as to enable the shareholders to receive their usual dividends. Three fourths of the shareholders were in favor of the bill. A resolution approving of the bill was then agreed to.

The *Mechanics' Magazine* learns from Paris that the Ministers of Commerce and Foreign Affairs have appointed a commission to study, from a technical and international point of view, the questions raised by the proposal addressed by the United States to the European and American Governments, relative to the joint determination of arrangements for the preservation of submarine telegraph cables in peace and war. It is not the first time that the international question has been raised. The increasing number of submarine cables renders this subject of greater interest than ever, especially to ourselves, as by far the major portion of the capital of the submarine cables now in existence is British.

The entire amount of cable for the Falmouth, Gibraltar and Malta cable has been manufactured. The Scandaria, with over 600 miles of cable on board, has already left the Thames for Malta, and the Edinburgh has also taken in cable and followed her. This cable will be laid in three sections, commencing from Malta to Gibraltar, and from there to Lisbon; the Falmouth and Lisbon section will be subsequently laid.

Rapid progress is being made at Messrs. Siemens' works, at Charlton, with the China and Japan extension of the Great Northern Telegraph. The vessels engaged are the Danish frigate Tordenskjold, and the steamers Cella and Great Northern, which are being fitted up with machinery and tanks by Messrs. Easton and Amos. Nearly 500 miles of cable are completed.

The manufacture of the British-Indian extension cable from Ceylon to Singapore is steadily progressing, over 1,000 miles having been made up to the latter part of April. The vessels intended for this expedition are being fitted up with the necessary tanks and machinery.

The cable for the West India, Panama and Pacific Telegraph Company is being rapidly progressed with, and shipment is now taking place, three vessels having already taken in their allotted portions.

The weather telegraphs of Europe now predict the condition of the weather from England to Sicily for many hours beforehand, with perfect regularity and almost unerring certainty. The loss thus averted may be calculated at a high figure. The Paris papers publish their weather despatches as regularly and as carefully as they do the fluctuations of the Bourse.

The mid-channel cable has been laid from Portheworn to the Wolf Rock, and buoyed.

The following are the principal clauses of an act which has received executive sanction, and been made public in reference to telegraphic communication across the territory of Colombia:

"The executive is authorized to concede permission to any company or person who may solicit it, to establish (land ?) on the coasts of the republic the extremities of telegraphic submarine cables, which shall place the nation in connection with other parts of the world, as well as to unite the said cables with land lines of telegraphs. The telegraphs which may be established in the national territory, and to which the previous article refers, shall be considered of public benefit, consequently they will be exempt from the payment of all national and State taxes or contributions. The lines which accept this concession will, from this fact itself, be obliged to transmit gratuitously all official communications of the government of the Union or of the States. In the case of foreign war or interior commotions the lines will only operate under the surveillance of the political authorities."

The telegraph cables across the channel between England and France are in very bad condition, but as they belong exclusively for eight years to an English company, and the latter will make no renovation, there is no help for the delay in that direction.

(From the *Journal des Telegraphes*.)

On the Insulation and Conductivity of Telegraph Lines.

By EMILE LACONE.

It is important to be able to calculate with facility the actual condition of the line, but in order to do this it is not sufficient merely to ascertain the resistance of a line with one extremity to the earth, for we thus obtain a fictitious resistance, and not the true value of the conductivity of the wire, or of the insulation resistance; a defect in the conductivity being concealed by a fault in the insulation and *vice versa*.

A new method consists in finding by the ordinary process the resistance of the line:

1. When the distant end is connected to earth.

2. When the distant end is disconnected and insulated.

But, generally, in order to arrive at and lay down formulas enabling us to distinguish faults of insulation from those of conductivity, we are obliged to employ the differential and integral calculus, which gives rise to very complex equations; otherwise, for the sake of simplicity, we suppose the entire amount of escape to be concentrated in the middle of the line. This process, however, requires the solution of equations of the second degree, which cannot readily be done daily by all the employees. If, however, we suppose the total escape at first to be situated near the battery, and afterwards at the remote extremity of the line, we obtain two very simple formulas, which are a more than sufficient approximation in practice. We are, in the other case, obliged to neglect values much greater than those arising from the errors which are made in employing the following simple formulas:

$$R = \frac{d^2 l}{32} (2i - t)$$

$$r = \frac{d^2 t}{32 l} \left(\frac{2i - t}{i - t} \right)$$

It is easy to demonstrate the amount of the error committed:

R = resistance of insulation per kilometre.

r = resistance per kilometre of the line wire, expressed in units of the wire of the line tested.

d = diameter of the wire tested, expressed in millimetres.

l = length of the line in kilometres.

t = resistance of the line when to earth, the rheostat giving the French unit of four millimetres.

i = resistance of line disconnected.

When the rheostat is divided into Siemen's units, or Ohms, the formulas become:

$$R = \frac{d^2 l}{320} (2i - t)$$

$$r = \frac{d^2 t}{320 l} \left(\frac{2i - t}{i - t} \right)$$

The daily use of these formulas gives an exact knowledge of the condition of the line, and in case of derangement, by the aid of the daily tables furnished by the preceding tests, the exact location of the fault, and also its nature, may be ascertained.

For example, we give the measurement of a bad wire, four millimetres diameter, and 225 kilometres in length.

We found: $R=820.512$ kil., and $r=3.78$.

R shows the escape due to the bad insulators, and r the great resistance of bad and unsoldered joints.

After having changed the insulators and soldered the joints, we found:

$R=820.512$ kil., $r=0.92$.

This indicates a very satisfactory insulation, and high conductivity—since, deducting the escape, we have nearly unity for the value of r .

A New Submarine Cable.

MESSRS. C. T. & J. N. CHESTER, as will be seen by their advertisement, have taken the exclusive agency of the Kerite or Hard Rubber Covered Wire, and are about to introduce it for submarine cable wires. For many purposes Kerite has shown itself to be one of the best insulating substances for telegraph wires. Its use in the manufacture of submarine cables is, we believe, new, but the tests applied indicate its adaptability for that purpose. Any information in regard to it will be cheerfully furnished by the Messrs. CHESTER, at their office and manufactory, No. 104 Centre street.

New Patents.

For the week ending May 10, and each bearing that date.

No. 102,748.—ELECTRO-DEPOSITION OF NICKEL. Isaac Adams, Jr., Boston, Mass.

Claim.—1. The combination of nickel to be used for anodes of a metal or metalloids, electro-negative to the nickel in the solution employed.

2. A nickel anode, combined with carbon, and cast in the required form.

No. 102,856.—ELECTRO-MAGNET. Henry M. Paine, Newark, N. J., assignor to himself and M. S. Frost, New York City.

Claim.—An electro-magnet, whose limbs are substantially sectors or segments, bound together by a tie-bolt C, and washer B, in the manner and for the purpose described.

EXTENSION.

HENRY N. BAKER, of Binghamton, N. Y. Letters patent No. 14,759, dated April 29, 1856; re-issue No. 3,812, dated January 25, 1870. *Improvement in Printing-Telegraphs*.

Claim.—1. In a telegraph printer a magnet for producing or controlling the impressions—actuated by electrical impulses, and situated in a main circuit, distinct from, and independent of the electrical impulses and circuit which control the movements of the type wheel, so that the impressions can be taken on the paper independently of any other operation, substantially as set forth.

2. A roller, actuated by a weight or spring, for feeding the paper, in combination with a type wheel, actuated or controlled by a magnet, in one main circuit, and the impression mechanism, substantially as specified, actuated by a magnet in another main circuit, and liberating mechanism that feeds the paper, substantially as set forth.

MARRIED.

KNAPP—KEARNEY.—At Newark, N. J., on the 11th inst., by the Rev. Dr. CHADWICK, Mr. JOHN R. KNAPP, of the Western Union New York Stock Exchange office, to Miss SUSIE L. KEARNEY, both of Newark.

POPE—PORTER.—At the residence of the bride's father, Pittsfield, Mass., Tuesday, May 10th, by Rev. Mr. WELLS, Mr. HENRY W. POPE to Miss LUCY D. PORTER.

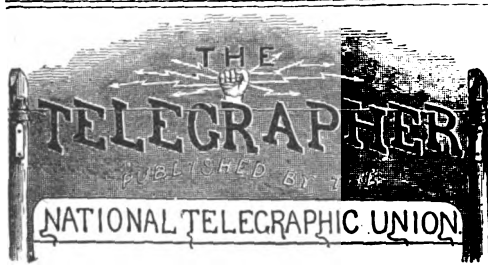
WAY—ELDRIDGE.—In Albany, N. Y., on the 4th inst., by the Rev. Dr. DARLING, Mr. EDWARD WAY, formerly operator at West Albany, to Miss IDA ELDRIDGE, both of Albany.

DIED.

BURNS.—At Fishkill, N. Y. Wednesday, May 4th, Mr. P. H. BURNS, of consumption.

GROSS.—After a brief illness, at the residence of his father, 915 Sargeant Street, Philadelphia, on Wednesday, May 4th, HARRY GROSS, aged about 23 years. He had been in the employ of the W. U. Telegraph Company for a number of years, and at the time of his death was night clerk, which position he has faithfully filled for three years past. The company and public alike lose a faithful servant, whose place it will be difficult to fill. *Requiescat in pace.*

WISNER.—Of tubercular consumption, in Philadelphia, on Friday, April 1st, W. B. WISNER, of the B. & B. Telegraph office, New York, aged 18 years. By his death the telegraphic fraternity has lost one of its brightest ornaments, the company by which he was employed one of its most valued servants. Quite unassuming and reliable, it will be hard, indeed, for his former associates to fill the place in their affections made vacant by his loss.



SATURDAY, MAY 14, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE NATIONAL TELEGRAPHIC UNION.

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Vice-President. W. O. LEWIS....New York.

Treasurer.....A. L. WHIFFLE...Box 39 P. O., Albany, N. Y.

Recording Sec.. W. W. BURHANS...Box 6010, P. O., New York.

Corres. Sec....F. L. POPE.....Box 6010 P. O., N. Y.

TELEGRAPHIC EDUCATION AND PROFICIENCY.— AN IMPORTANT PROBLEM.

We have heretofore urged upon the members of the telegraphic profession the importance of perfecting themselves in professional knowledge. The standard of professional proficiency should be greatly advanced from that now required, in order to enable the operators to hold what are termed first class situations. At present a large proportion of what are considered good operators know no more of their business than will enable them, with the line and instruments in fair condition, to send and receive with facility. If thrown upon their own resources and information to run wires, prepare and adjust batteries, connect repeaters, discover and remedy difficulties, etc., they are at a loss how to do it, and must wait the advent of some one better informed to do for them what every telegrapher should be able to accomplish readily, and without difficulty. In every office of any importance one or more persons, according to its size and the number of wires worked from or through it, are specially employed, whose duty it is to attend to these matters, and supply the deficiencies arising from the insufficient professional acquirements of their associates. This is all wrong, and should be corrected. While it cannot be expected that every telegraph operator should be a scientist, it should be requisite that he or she have such a general knowledge of matters, whether scientific or practical, as are essential to the intelligent administration of all the duties involved in the position occupied. The telegraphic profession is one of the most honorable and confidential character. Telegraph operators should regard themselves and their position as superior to that of day laborers, whose responsibility terminates with the merely mechanical performance, under orders, of a certain amount of machine work per day. They should aspire to become something more than mere operators. The higher positions in the business should be made the rewards of superior skill and intelligence, and should be attainable on equal terms to all who may have the ambition to strive for them.

We are pleased to know that there has been within the last two or three years a decided improvement in this respect, and that an increased desire for the attainment of a higher degree of professional knowledge has been to a limited extent developed. The demand for standard telegraphic works has greatly increased, and is increasing. The large sales of POPE'S *Modern Practice*, and of the works of SABINE, CULLEY, DU MONCEL and other telegraphic authors, has shown the awakening of a desire for the attainment of a practical and theoretical knowledge of electricity and telegraphy which promises well for the future. We desire to see this spirit grow and increase until it shall be the rule instead of the exception among telegraphers. Knowledge is not only power, but also profit in telegraphy. The mere mechan-

ical operator can never hope to attain advancement to the higher and more profitable positions, or, if through adventitious circumstances or personal favoritism promoted, cannot maintain creditably the undeserved preferment. Insufficiently educated operators, therefore, must necessarily content themselves with inferior positions and lower compensation.

We have recently called attention to the overcrowded condition of the telegraphic ranks. The supply of labor in this department is indisputably in advance of the demand, and, as a natural consequence, salaries are declining. While this is true of the profession generally, there is not, and never has been, an excess of thoroughly educated telegraphers. As DANIEL WEBSTER once remarked, to a person who asked whether the legal profession was overcrowded, "there is always room higher up." So it is with telegraphy. While of mere operators, in the general acceptance of the term, there is an over-supply, there is still room "higher up."

Telegraph companies and managers make a very serious mistake in not making it more to the interest of their employes to seek to advance themselves beyond the mere mechanical routine of their profession. When they employ operators in important and responsible positions, who are not fully competent for the discharge of their duties, merely because they are willing to underbid and supplant those better qualified, at less compensation, they injure not only the telegraphic profession but also their own interests, and outrage the public, who are compelled to commit important interests to their hands. The telegraph company which furnishes the best system of lines and instruments, and employs the best telegraphic talent, will, in the end, secure the patronage of the public. Those who are constantly and largely employing telegraphic facilities are much more interested that their work shall be properly performed than in the reduction of the charges for such service to prices at which this is impossible. Cheap telegraphing is a delusion and a snare. What is wanted is promptness, certainty and reliability in the performance of telegraphic service. If these are guaranteed any reasonable price will generally be cheerfully paid.

Those nuisances, so-called telegraph colleges and institutes, are constantly sending out crude and incompetent operators, who are willing to accept situations which they are utterly incompetent to fill, at salaries too low to secure the services of properly qualified operators. In this way they work great injury to the profession, and should be discountenanced by every telegraph manager and operator.

The professional standard in telegraphy can best be advanced and established by coöperation between telegraph managers and operators. Grades should be established, and the rank of operators fixed by some recognized authority, and situations attainable only to such as can furnish the evidence of their ability and right to fill them, and the compensation regulated accordingly. It was one of the objects of the National Telegraphic Union to accomplish something of this character, but it did not succeed in doing so, for reasons which it is not necessary to recapitulate. It is of the utmost importance to all interested in telegraphing that it should be done. How it can be accomplished is the problem which should receive the earnest consideration of telegraph managers and telegraph employes, and we invite the communication through our columns of their views on the subject.

Obituary.

In our death record this week will be found the announcement of the decease of Mr. P. H. BURNS, who died of pulmonary consumption at Fishkill, on the Hudson, on the 4th inst.

Mr. BURNS has for several years enjoyed a national reputation as the holder of the gold Champion Telegraph Key, for excellence and rapidity of transmission by the MORSE system.

About four months since he returned from Boston, Mass., where he had been engaged, in addition to his telegraph duties in the Western Union office, in studying law at the Harvard Law School, intending to embrace that profession. He was quite ill with consumption at that time, but had hopes of ultimate recovery. His hopes proved illusive, however, and after severe suffering, which he endured with fortitude and patience, he died at 4.30 o'clock A. M., as before stated.

Mr. BURNS' numerous telegraphic friends and acquaintances will be saddened at the announcement of his death. The profession loses one of its most able, expert and efficient members. He will, however, be long remembered for his many excellent qualities, and for his well maintained reputation as the champion operator in this country.

Bishop's Telegraph Cables.

ATTENTION is called to the new advertisement of Mr. SAMUEL C. BISHOP, proprietor of the BISHOP GUTTA-PERCHA WORKS, located at Nos. 422, 424, and 426 East Twenty-fifth street, in this city. We have already, in THE TELEGRAPHER for January 1st, set forth at some length the facilities Mr. BISHOP possesses at his works for the manufacture of telegraph cables and of insulated wires of all descriptions. Mr. BISHOP announces that he is now prepared to guarantee to make and deliver at his factory any style of cable, *insulated with Gutta-Percha*, at a price not exceeding that for which cables of similar style and quality can be imported. This is an important announcement, and parties desiring cables should patronize Mr. BISHOP in preference to sending their orders to the over-worked cable manufactories abroad.

Mr. BISHOP'S cables and insulated wires are themselves their own best endorsement as to quality. They speak for the excellence and carefulness of his manufacture in no uncertain manner, and have met with general approval wherever they have been used. In addition to his telegraph wares Mr. BISHOP manufactures all kinds and descriptions of Gutta-Percha goods, of excellent quality and on reasonable terms.

A list of agents for all articles of his manufacture will be found in the advertisement.

Removal of L. G. Tillotson & Co.

THE firm of L. G. TILLOTSON & Co. are no strangers to the readers of THE TELEGRAPHER, or to the telegraphic interests and telegraphers of this country. From a small beginning TILLOTSON has built up a business of which any man may well be proud. Assisted by his partners, each of whom is an expert in his department, his business increases from year to year to such an extent as to necessitate increased accommodations. The premises occupied by them during the last two or three years, at No. 11 Dey street, having become altogether insufficient, the entire five story building, with basement and sub-cellar, extending the whole depth at No. 8 Dey street, has been leased and fitted up in the most complete manner for the various departments of the business, regardless of any necessary expense.

This firm combine with their telegraph business that of the manufacture and sale of railroad supplies of every description, and have become as well known to the railroad as to the telegraphic interests of the country.

The manufacture of telegraph instruments and materials will be continued at their establishment in Elm street, as heretofore—a detailed description of which we published in a supplement some months since.

Energy, enterprise and honorable dealing are characteristic of TILLOTSON & Co., and their history shows that these qualities, combined with intelligent business qualifications and capital, are the requisites which insure success.

A concession for the laying of a cable from Constantinople to Odessa has been granted to a company, which is represented at Constantinople by M. Coumbari, Director of the Observatory.

THE LECLANCHE MANGANESE BATTERY.

A lot of the above BATTERIES just received.

They are furnished all complete, with the necessary chemicals to put into immediate action.

Address,

C. WILLIAMS, Jr.,
109 COURT ST.,
BOSTON.

GREAT REDUCTION IN PRICES OF TELEGRAPH WIRE!

Owing to the decline in gold, and other circumstances, we are now supplying our superior quality of

GALVANIZED WIRE

at prices much below former rates. Parties desiring the Best Wire at the Lowest Price should call upon us. Having sold over 8,000 miles of this Wire during the past eight months, to the satisfaction of the parties purchasing, we know whereof we are speaking.

L. G. TILLOTSON & CO.,
8 DEY STREET, N. Y.

FOR SALE,

Shares of ATLANTIC & PACIFIC TELEGRAPH STOCK, at almost any price that may be offered.

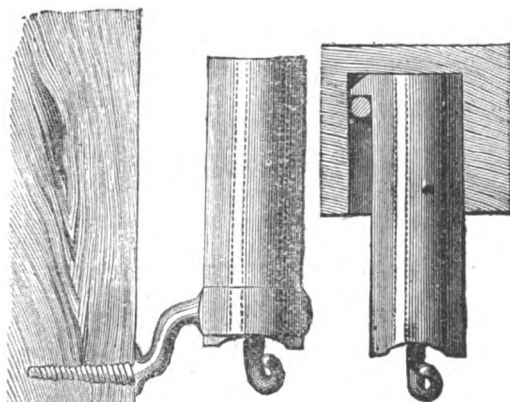
Address,

P. O. BOX 1714, N. Y.

BROOKS' PATENT PARAFFINE INSULATOR.

FOR SIDE OF POLE.

FOR CROSS-ARM.



L. G. TILLOTSON & CO.,
AND
BLISS, TILLOTSON & CO.,
CHICAGO,
SOLE AGENTS FOR THE UNITED STATES.

The improvements introduced in the construction of this Insulator make it, beyond question, the BEST.

Its insulating properties exceed those of the glass a hundred thousand fold.

In strength and durability it has no equal.

They are warranted not to break or part.

They are made with a screw shank, to fasten into the pole, price 48 cents each, or without the screw, for cross-arms, 30 cents each.

Pamphlets furnished, with full description.

A stock of the Insulators always on hand at our stores.

THE BROOKS INSULATOR, with the PATENT COMPOUND WIRE and our PATENT MAGNETS, constitute the best Telegraph Lines ever constructed.

L. G. TILLOTSON & CO.,
8 DEY STREET, NEW YORK.

BLISS, TILLOTSON & CO.,
247 SO. WATER ST., CHICAGO.

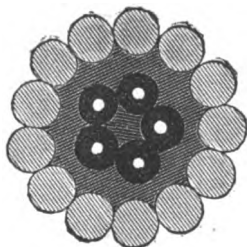
Sole Agents of American Compound Telegraph Wire Company.

Importers of English Galvanized Wire; Manufacturers and Dealers in every description of Telegraph Machinery and Supplies.

THE BISHOP GUTTA-PERCHA WORKS,

422, 424, 426 East 25th St., N. Y.,

SAMUEL C. BISHOP,
PROPRIETOR,



ONLY AMERICAN MANUFACTURER

OF

PURE GUTTA-PERCHA GOODS

IN THE

UNITED STATES.

Have on hand, and make to order

SUBMARINE TELEGRAPH CABLES,

INSULATED WIRES, for

TELEGRAPH AND ELECTRIC USE, and for

BLASTING AND MINING PURPOSES,

in every variety desired.

As an Insulation for Telegraph Cables and Electric Conductors GUTTA-PERCHA has been universally adopted by all scientific and practical Electricians and Manufacturers of Telegraph Cables and Wires in this country and Europe, and has sustained, with increasing confidence in its superiority, the practical test of over twenty years' general use.

The PROPRIETOR would say, to all parties desiring

SUBMARINE TELEGRAPH CABLES,

that he will guarantee to make and deliver at his Factory any style of Cable, Insulated with Gutta-Percha, as low as they can import Cable of the same style and quality.

ORDERS RECEIVED AT THE FACTORY.

Messrs. L. G. TILLOTSON & CO.,
8 DEY STREET, NEW YORK,

AND

BLISS, TILLOTSON & CO.,

247 SO. WATER ST. CHICAGO, ILL.,

have been appointed by me GENERAL AGENTS for the sale of any Telegraph Cable or Wire manufactured at the Works in New York, at Factory Prices, delivered in New York.

JOHN THORNLEY, 503 Chestnut St., Philadelphia,

has been appointed Agent for the sale of any and all goods manufactured by me, at Factory Prices, delivered in New York.

SPECIAL AGENTS IN NEW YORK,

for sale of all goods (except Telegraph Articles), are

H. G. NORTON & CO., 26 Park Place,
RUBBER CLOTHING CO., 347 Broadway,
A. D. & C. A. HODGMAN, 201 Broadway.

SAMUEL C. BISHOP.

OFFICE AT FACTORY.

NEW SUBMARINE CABLE.

KERITE,

OR

HARD RUBBER COVERED WIRE.

SUBTERRANEAN & AERIAL WIRES,
OF THE
HIGHEST INSULATION.

CHARLES T. & J. N. CHESTER,
No. 104 Centre Street,

EXCLUSIVE AGENTS,

offer for sale, as TELEGRAPH and ELECTRIC CONDUCTORS, Wires protected by the BEST INSULATOR and STRONGEST RESISTANT TO CHEMICAL ACTION and ATMOSPHERIC INFLUENCE.

After the experience of several years in the use of KERITE for purposes of insulation, we have concluded to adopt it as the very best substance for wire covering, not only for use of offices but for SUBTERRANEAN, SUBMARINE and AERIAL LINES. We have used it unprotected for years under ground, and exposed to the most injurious atmospheric influences—to heat, cold and moisture—and have yet to learn its failure, when under ordinary insulating substances would have been rapidly destroyed. UNDER WATER it has retained an electrical charge for many hours, thus ranking it in the HIGHEST GRADE of NON-CONDUCTORS.

We have, therefore, made arrangements not only to secure THE EXCLUSIVE AGENCY for its sale, for the purposes for which we have already sold it so largely, but to furnish complete

IRON-CLAD CABLES,

of the usual size, with KERITE COVER, believing that it will exceed, in insulation for submarine purposes, ANYTHING HITHERTO MANUFACTURED.

We shall be happy to furnish estimates for any amount and size of cable, which will be found to compete with any other construction, both in quality and price.

In corroboration of our statements we append extracts from reports of those who have exposed it to the severest practical tests.

From Prof. SILLIMAN, of Yale College.

"I am satisfied, as the result of my own researches, that ozone is by far the most fatal of atmospheric influences. I have submitted portions of KERITE to the action of a highly ozonised air for a sufficient length of time to prove them, and at the same time have exposed the best English Gutta-Percha Covered Cable to the same tests, with the following result: After long experience KERITE resists perfectly! The best English Gutta-Percha Cable was speedily destroyed. A few days' exposure to ozone would produce more effect than many years in a normal atmosphere, exposed to carbonic disulphide, nitric acid, sulphuric acid, sulphuric dioxide, nitric peroxide, chlorine gas and alkaline hydrates. Gutta-Percha is immediately dissolved in carbonic disulphide, and powerfully acted upon by alkaline hydrates. Some samples of KERITE resist the action of the former in a surprising manner, and are completely unaffected by the latter."

From MOSES E. FARMER, of Salem, Mass.

"I have tested 195 feet of this wire, and found it a better insulator than Gutta-Percha."

"The instrument used would have shown a current through 300,000 miles of Telegraph wire. The 195 feet showed no leakage in water. The KERITE insulated wire withstands atmospheric agencies wonderfully, and will last for years when exposed to the atmosphere; likewise, when buried in the earth, there is no reason to apprehend decay. It is a well known fact that Gutta-Percha deteriorates very rapidly when exposed to atmospheric influences, and therefore cannot be advantageously used for the covering of wire for out-door exposure unless buried in permanent moisture."

From Mr. E. A. CALLAHAN, Supt. Gold and Stock Telegraph Co.

"It has, under all circumstances, given me the fullest satisfaction. The peculiar nature of our business renders it necessary for us to use the most perfectly insulated wire. I have tried several kinds of insulated wire, but have been compelled to take down and substitute KERITE instead. Wire strung a year since is as good as the first day put up. Have tested it after three days' constant rain and could not find one degree of escape. We use it in gas pipes, and sometimes placed near furnaces subject to very high temperature. I have not been able to detect the slightest change from its original condition."

"We have exposed it to the extreme cold and heat of the past year, strung over the roof of buildings, which we consider the best test of its indestructible and insulating qualities."

CHESTER, PARTRICK & CO.,
TELEGRAPHIC
AND
ELECTRICAL ENGINEERS,
CONTRACTORS, etc.,

38 South Fourth Street Philadelphia,

Manufacturers of, and dealers in every variety of
TELEGRAPHIC, ELECTRIC, AND PHILOSOPHICAL APPA-
RATUS, BATTERIES, WIRE, ACIDS, INSULATORS,
MEDICAL INSTRUMENTS, AND OTHER SUPPLIES.
Also, Contractors for the construction, re-construction, and
repair of

TELEGRAPH LINES, SIMPLE BURGLAR ALARMS, FOR
PRIVATE RESIDENCES, AND BURGLAR ALARMS
WITH "TELL-TALE CLOCK," AND OTHER
APPARATUS FOR BANKS AND
PUBLIC BUILDINGS.

Among other Telegraphic Supplies constantly kept on hand,
they are prepared to furnish promptly the following novel
articles:

KERITE (OR HORN COVERED) COPPER OR COMPOUND
WIRE OR CABLES,
COVERED COMPOUND AIR LINE WIRE,
BLASTING APPARATUS, CARTRIDGES, BATTERIES, &c., &c.
CALCIUM LIGHTING APPARATUS,
MEDICAL BATTERIES,
INDUCED AND DIRECT CURRENTS;
ELECTRO-PLATERS' BATTERIES AND MATERIALS,
ELECTRO GONGS, OF ANY DESIRED SIZE OR WEIGHT,
ALARM APPARATUS,
PATENT APPARATUS FOR THE MANUFACTURE OF NITRO-
GLYCERINE, ELECTRICAL CLOCK WORK,
&c., &c., &c.

They guarantee to give satisfaction to all who favor them with
orders, in the promptness of execution and in the quality of
articles supplied.

Also, have on hand and for sale,
MODERN PRACTICE OF THE ELECTRIC TELEGRAPH.
BY
F. L. POPE.

AMERICAN
COMPOUND TELEGRAPH LINE WIRE.

COPPER FOR CONDUCTIVITY.

STEEL FOR STRENGTH.

The superiority of the COMPOUND TELEGRAPH WIRE,
compared with iron, consists in its LIGHTNESS, reducing by over
fifty per cent. the number of poles and insulators required;

Relative TENSILE STRENGTH, homogeneity and elasticity—de-
creasing the liability to breakage from cold weather, sleet, etc.;

CONDUCTIVITY—insuring great improvement in the working of
lines in any condition of the weather;

And in its DURABILITY, which greatly exceeds that of the best
galvanized iron wire;

Altogether resulting in a very great reduction in the cost of
maintaining and working telegraph lines, while, at the same
time, insuring

EFFICIENCY AND RELIABILITY.

Address—

American Compound Telegraph Wire Co.,

ALANSON GARY, Treasurer,

No. 234 West 29th St.,

New York.

Agents in New York,

L. G. TILLOTSON & CO.,

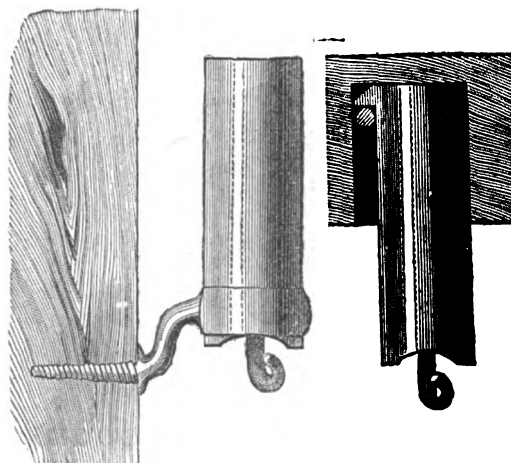
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PATENT PARAFFINE INSULATOR

WORKS,

21 ASPEN ST., North of 2123 CHESTNUT ST.,

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This Insulator shows a resistance of 100,000,000,000 B. A. Units,
excelling ordinary Insulators in humid weather fully one
hundred thousand fold.

Its great strength and durability make it the most economical
Insulator in use.

Every report received from them is of the most favorable
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PRACTICAL TELEGRAPHY,

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Also, PLAIN, WOVEN, BRAIDED, ENAMELLED,

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TELEGRAPH OFFICE WIRES,

Also, Telegraph Switch Cords,

many Patterns, Plain, Woven and Braided. Parties being
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OF EVERY DESCRIPTION.

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Zincs, Tumblers, Porous Cups, and all kinds of Battery
Material.

Hill's Patent Galvanic Battery.

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Connection.

Agents for pure Nitric and Sulphuric Acids, manufactured
by the Lodi Chemical Works.

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" Gutta-Percha covered Wire and Cables American
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" the best Manufacture of Plain and Galvanized Iron
Wire.

" of American Compound Telegraph Wire Co.

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POPE'S MODERN PRACTICE

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Instruments repaired at short notice.

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BLISS, TILLOTSON & CO.,

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Respectfully inform their Customers, and all parties purchasing

TELEGRAPH AND ELECTRIC MATERIAL,

that they have been appointed by S. C. BISHOP, successor to the

BISHOP GUTTA-PERCHA COMPANY,

OF NEW YORK,

GENERAL AGENTS for the sale of any articles manufactured by him for

TELEGRAPHIC AND ELECTRIC USE.

They are now prepared to fill promptly any orders for goods on hand, or to be manufactured, at the Manufacturer's prices in New York.

The long experience of Mr. SAMUEL C. BISHOP, in the manufacture of

PURE GUTTA-PERCHA GOODS,

and the reputation he has gained and enjoys for the superior quality and perfection of manufacture of

SUBMARINE TELEGRAPH CABLES

AND

INSULATED WIRES

of various kinds, insulated with

PURE GUTTA-PERCHA,

renders this arrangement a very important one for our numerous patrons throughout the country, and we confidently recommend these goods to their especial notice as being

FULLY EQUAL, IF NOT SUPERIOR,

to any other in use.

THE PRINCIPAL ARTICLES manufactured and offered for sale are

SUBMARINE TELEGRAPH CABLES,

(Any size required).

Gutta-Percha covered Telegraph Office Wire, in great variety of size and style.

SUBTERRANEAN WIRES, covered with Gutta-Percha and Lead outside, various sizes.

SUBTERRANEAN WIRES with Gutta-Percha and braided fibre, and BISHOP'S PATENT COMPOUND outside.

SUBTERRANEAN WIRES, with Fibre and Bishop's Patent Compound outside.

POLE LINE CORDAGE, with Fibre, and Bishop's Patent Compound outside.

BRIDGE'S Patent Electric Cordage.

BRIDGE'S Patent Double Covered Cordage.

BISHOP'S PATENT COMPOUND WIRE,

for out-door use and office connections.

INSULATED WIRES,

with two Conductors, both plain and with braid outside, and a great variety of other kinds made to order.

COTTON AND SILK-COVERED WIRES, both twist and braided.

This arrangement,

TOGETHER WITH OUR OWN

EXTENSIVE MANUFACTORY in NEW YORK,

and our great variety of TELEGRAPH MATERIAL in stock, fully establish our claim that our stores are the

DEPOTS OF TELEGRAPH SUPPLIES in THIS COUNTRY.

IMPORTANT TO TELEGRAPH MANAGERS.

Hereafter all Magnets of our manufacture will have the resistance plainly marked upon each.

MAGNETS supplied of any resistance required.

We have in stock 200 miles No. 8, Best Quality GALVANIZED WIRE, which we offer at Six Cents per lb., Gold.

Also, Nos. 9 and 12, at Lowest Market Rates.

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PREMIUMS! PREMIUMS!!
FOR THE SPRING OF 1870,
TO THE FRIENDS AND SUPPORTERS

OF

"THE TELEGRAPHER."

It has been the custom of the present publisher and editor of
"THE TELEGRAPHER"

to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to

INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES AND INJUSTICE practised by them upon its employes, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

The President of that Company, however, distinctly disavows this action, and says, in a communication to the editor of THE TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S) 'discontinuance and discountenance' a test of competency for our service."

It will be seen, therefore, that this movement is one incited on the part of certain of the subordinate officials of that Company by personal spite and chagrin, because the paper has remained UNSWERVINGLY FAITHFUL to the interests of the Practical Telegraphers of the country, and could not be used for the personal ends of these disgruntled officials.

It remains to be seen whether the Practical Telegraphers of this country CAN BE RELIED UPON to stand by those who seek to secure to them JUSTICE AND FAIR TREATMENT.

In addition to the inducement offered above to exertions in support of the paper, we offer the following

LIBERAL PREMIUMS FOR NEW SUBSCRIPTIONS.

This offer will be good until May 31st, 1870.

For TWENTY-FIVE SUBSCRIBERS we will give to the person sending the names and money a

NO. 1 BOX RELAY (WARRANTED).

For TWENTY SUBSCRIBERS a No. 1 TELEGRAPH KEY, either Caton or Self-Closing, as may be preferred, and a copy, either of "Modern Practice of the Electric Telegraph" or "Sabine's Electric Telegraph."

For FIFTEEN SUBSCRIBERS a No. 1 TELEGRAPH KEY, any pattern that may be desired.

For TEN SUBSCRIBERS, the Fourth Edition of "Cully's Handbook of Practical Telegraphy."

For SIX SUBSCRIBERS, "Noad's Inductorium" and "Sabine's Electric Telegraph."

For THREE SUBSCRIBERS, F. L. POPE'S "Modern Practice of the Electric Telegraph."

In addition to the above, we will give to the person who shall, on or before the 31st of May, send us THE LARGEST LIST OF SUBSCRIBERS, not less than FIFTY,

A TWENTY DOLLAR GOLD COIN!

For the second largest list, not less than THIRTY-FIVE,

A TEN DOLLAR GOLD COIN!

Subscriptions must be for one year, or equivalent to that, and at the regular subscription price of the paper,

TWO DOLLARS PER YEAR.

Subscriptions for less than a year will be counted as fractional parts of one subscription.

Any of the Premiums offered may, at the option of the receiver, be changed for other articles of equal value.

Remittances may be made by Post-office order or registered letter, at the risk of the paper. From remittances of not less than Five Dollars the expense of the money order or of registering the letter may be deducted.

AMERICAN FIRE ALARM AND POLICE TELEGRAPH, GAMEWELL & CO., Proprietors, 104 Centre Street, N. Y.

This system of Fire Alarm Telegraph, with a central office, or upon the

AUTOMATIC PLAN,

is now in operation in the following cities, to which reference is made for evidence of its great superiority and value, and UNIFORM reliability:

BOSTON,	PORTLAND,
CHICAGO,	ST. JOHN, N. B.,
PHILADELPHIA,	HARTFORD,
CINCINNATI,	TROY,
ST. LOUIS,	NEW HAVEN,
BUFFALO,	ROCHESTER,
BALTIMORE,	SPRINGFIELD,
MOBILE,	TOLEDO,
NEW ORLEANS,	ALBANY,
PITTSBURG,	COLUMBUS,
LOUISVILLE,	LAWRENCE,
ALLEGHENY,	MILWAUKEE,
MONTREAL,	SAN FRANCISCO,
QUEBEC,	CAMBRIDGE,
	WASHINGTON, D. C.

THE DISTINCTIVE FEATURES OF THE
AMERICAN

FIRE ALARM TELEGRAPH

are a Combination of Circuits, the Automatic Signal Boxes, Electro-Mechanical Bell and Gong Strikers.

THE AMERICAN FIRE ALARM AND POLICE TELEGRAPH is covered by some twenty patents. Very early after its introduction into Boston, GAMEWELL & Co. purchased the original patents of FARMER & CHANNING, and during the past fifteen years have spared no expense or pains to improve and perfect this system.

Any information desired in regard to the above system will be cheerfully and promptly furnished upon application at the office. A pamphlet, setting forth more fully its advantages and superiority, has been printed, and will be supplied to Municipal Authorities and others interested in Fire Alarm and Police Telegraphy, upon application as above.

DR. L. BRADLEY,

At No. 7 EXCHANGE PLACE,

Jersey City, N. J.,

Keeps constantly on hand and for sale his

Improved Telegraph Instruments

Having adopted the use of

OREIDE METAL,

which is much RICHER AND FINER than brass, he now presents his work in a style and of a quality that are unsurpassed. His relays were awarded the

FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same.

He is also manufacturing the

IMPROVED BUTTON REPEATER,

the cheapest, most reliable and simple repeater as yet invented

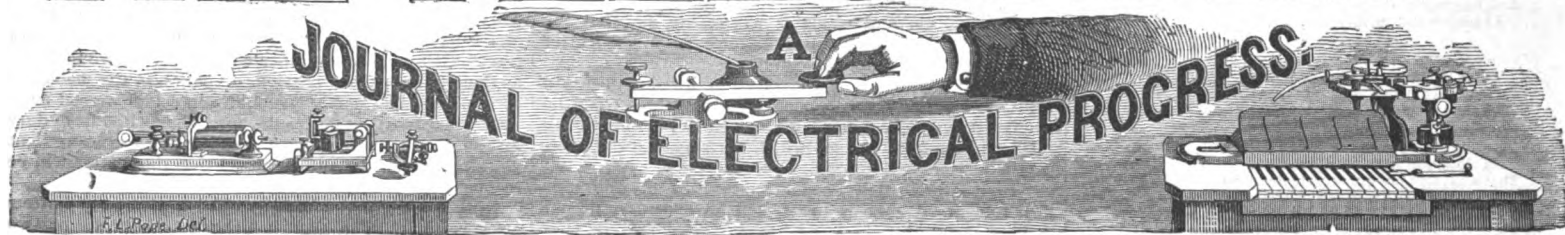
PRICES.

Button Repeaters.....	\$6 00
Relays, with helices in bone rubber cylinders (very fine).....	19 50
Small Box Relays.....	16 00
Medium Box Relays.....	17 00
Main Sounders, some as the above, with heavy armature levers without local connections, 75 cents less.	
Pocket Relays, with all the adjustments of the above, and good Lever Keys.....	22 00
Excellent Registers.....	40 00
Pony Sounders.....	6 75
Keys.....	6 50

All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package. He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

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THE TELEGRAPHER.



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Whole No. 201.

[From the *American Artisan*.]

AN EXTRAORDINARY ENGINEERING PROJECT ON THE OCEAN.

By W. A. HALL.

THE loss of the steamship *City of Boston*, with all on board, teaches us another sad lesson of the dangers of ocean travel. Whatever means can be shown to be within the possibilities of scientific engineering, that may tend to mitigate the dangers of the sea and lessen the risks to life and property, are worthy of and should receive the careful consideration of shipping merchants and others interested in ocean traffic.

That a system of floating telegraph and life preserving stations extending across the Atlantic, connecting with each other and with New York and Liverpool, properly anchored to the bottom of the ocean, is feasible and every way practicable, there is not the slightest doubt in the mind of the writer. Fourteen years ago he published in the *Scientific American* and in *Harper's Weekly* an illustrated plan for such a system, which was at the time submitted to the attention of nautical men with approving results as to its practicability; but the project proved to be too far in advance of the time to command the favorable attention of the shipping interests of the country. Times, however, have since changed. Great enterprises, that were then in doubt or scarcely dreamed of, are now among the facts of history. The Ocean Telegraph, Pacific Railroad, and Suez Canal are problems solved, and it is now thought that if the scheme here suggested can be so presented that its feasibility admits of reasonable demonstration, the spirit of the age will compel a practical test. It is for the purpose of calling attention to the subject, in the light of recent disasters, that the salient points in the project are here presented.

To attempt to anchor stations by a direct cable connection with the bottom of the ocean, as was first proposed (but afterward modified), is undoubtedly impracticable. The plan, as finally proposed, consists in creating an artificial bottom or anchorage at a depth of say one hundred feet below the surface of the water, or sufficiently below to avoid all effects of the surface action of storms and waves. This sub-surface anchorage is to consist of a submerged float or buoy of suitable material and capacity, held in position by a cable connected with heavy sunken weights resting on the bottom of the ocean. This submerged float, thus secured, as an artificial bottom, forms the basis to which the stations are to be anchored, having, of course, sufficient length of cable to admit of their riding the waves, the same as if anchored in a harbor with but a hundred feet of water.

That weights sufficiently heavy for the purpose can be sunken in three or four miles depth of water—that a cable of sufficient strength can be made to connect such weights with the submerged buoy, and maintain it permanently and securely in its position—that a cable of suitable strength and specific gravity can be made to connect such submerged float with a suitably constructed station, are simply questions of nautical and engineering science, already abundantly demonstrated in the repeated buoying of ocean telegraph cables when it became necessary to part them in a storm, and the repeated and successful dredging for the same when lost, even in deep sea soundings. The only question which admits of an excusable doubt is as to the possibility of the station safely riding out a storm when thus anchored. Let us examine this question for a moment.

It is not proposed to build these stations in the form of a schooner, ship, or any other known craft that is expected to navigate the ocean. They would be constructed with special reference to riding the heaviest waves, at anchor only, with special regard to strength and durability—and when so constructed, of the best material, it is simply absurd to suppose they would go to pieces in a storm, when a frail yacht, made almost of paper, is capable of weathering a Chinese hurricane.

One of the most important features of this plan is that the submerged float, to which the station is supposed to be secured, forms an elastic anchorage, that will yield from its vertical position in the water, avoiding thereby undue strain upon the cable, and allowing the station to ride the heaviest waves without the danger of being washed over, as might be the case if anchored directly to the bottom of the ocean. It may also be here suggested that the cable could be so attached to the station, above and below the water line, and the station so ballasted that it would ride the waves in a vertical position, and not be liable to rock and pitch, as is unavoidably the case with sea-going vessels. Any form of station that would best secure these results would be most desirable.

The stations thus permanently located and anchored could be readily connected with the different sections of the telegraph cable. The portions of the cable near the stations must necessarily be made of such material as will afford the greatest possible strength with a specific gravity but little greater than that of the water, to allow of a small section near the station to be buoyed sufficiently to float. This will permit the free rising and falling of the station in a storm, without injury to the conducting wire or its insulation. Thus prepared the station needs but to be supplied with the suitable material and apparatus, with a corps of operators and a few good seamen, to render it a combined lighthouse, life-buoy, and telegraph station in mid-ocean, to receive and transmit messages to the different stations and vessels along the line, to receive and answer signals of vessels in distress, and summon assistance, if necessary, by repeating the signals from station to station, and render any other service that might be required by the thousands of vessels that would be continually passing and repassing.

If the positions here assumed with reference to the engineering problems of the enterprise are correct, it needs not one word of argument to convince ship owners and underwriters that such a project, properly carried out, would be fraught with incalculable advantages to the shipping interests of the world.

It is clearly evident, with such a system in practical operation, that vessels crossing the ocean would not only be induced from self interest, but would be compelled by owners and insurance agents, to keep the course of these stations as nearly as practicable, thus establishing the line as a highway of lighthouses, life-buoys, and telegraph stations for the commerce of the world. With the stations located fifty miles apart a vessel need never be beyond the reach of signal, either from a station or some other vessel, in case of accident.

Besides these manifest advantages, it is more than probable, in a business point of view alone, that a system of telegraph stations, extending across the Atlantic as here proposed, would pay a handsome dividend on the cost of construction. Vessels passing any station, except in a storm, could easily exchange packages of telegrams, while very few passengers, with such facilities within reach, would neglect to forward at least one message to the loved ones at home from the boundless expanse of waters. Add to this the universal interest felt by the community, and especially by friends, in the precious cargoes of human freight when at the mercy of the storm king, the new feature in the telegraph columns of our daily papers—"Steamship *City of Paris* passed Station 27 at three o'clock this P. M.; exchanged signals and dispatches; all well," etc.—and we can begin to form a slight conception of the grandeur of a project so momentous in its character and objects.

But its financial advantages do not stop here. The fifty or sixty stations forming the line would in no wise interfere with the united sections of the cable, being used as a continuous telegraph line from shore to shore, with the decided advantage of the strong and certain working of a series of short circuits with relay batteries, instead of the feeble and many times indistinct pulsations of a single

circuit of two thousand miles of wire. If the business on our present lines from shore to shore pays, the system here proposed would have the equal advantage of that and the entire business of the ocean.

But it is impossible to enumerate all the advantages that must result from a system of such magnitude. The limits of the present paper permit but a glance at the subject, leaving the reader, in the plenitude of his imagination, to contemplate the result, should this greatest of all engineering projects ever become an accomplished fact.

Professor Morse Endorses the Pacific Submarine Telegraph.

It will be seen from the following letter, addressed by Prof. Morse to Mr. Cyrus W. Field, that the projected Pacific Submarine Telegraph meets with warm approbation from him:

"New York, April 18, 1870.

"To Mr. Cyrus W. Field.

"I thank you for the copy of your memorial to Congress on the subject of a submarine telegraph cable across the Pacific, together with the bill drafted for presentation to that honorable body, which I cannot but believe will meet their favorable consideration.

"You have a much easier task now, in presenting the enterprise to intelligent men, than we had in 1856 in explaining its nature and advantages to the British public, since experience has verified in modern history the prophecies then advanced in respect to the Atlantic cable. It was not till after a knowledge of the result of the satisfactory experiments on the night of the second of October, 1856, detailed in my letter to you of the next morning in London, that the commercial world awoke to the importance and feasibility of so novel an enterprise.

"I am persuaded that the experiments of that memorable night, the arrangements of which were under the supervision of Sir Charles Bright, Dr. Whitehouse, the late lamented Mr. Brett and myself, so far dissipated the doubts which naturally environ an untried project, that capitalists were induced to venture their investments in it, with what result the world now knows.

"I see no obstacles, scientific or physical, in your proposed Pacific cable, which have not been completely removed by the experience of the Atlantic cable. Indeed, this experience is the best guaranty of success in the Pacific.

"It has been suggested that as a commercial enterprise it might fail for want of employment; in other words, that there would not be business enough between the eastern and western Pacific shores to warrant so large an outlay. They who entertain such views belong to a past and slower age. Make the way, and there will be no lack of those who will use it. The same objection was urged against the construction of the first railroads and the first telegraphs. Time and experience have overthrown the objection in both cases and will in this.

"No one better than yourself can lead in this Pacific cable enterprise and, as in the case of the Atlantic cable project I never doubted, but, on the contrary, uniformly predicted its success, so now I have entire confidence, not only that you will be able to accomplish it, but that you will have and will deserve the honor of completing the 'fairy girdle' that encircles the world.

"I most cordially wish you success in obtaining the means at once to commence your labors.

"Respectfully, your friend and servant,

"SAMUEL F. B. MORSE.

"CYRUS W. FIELD, Esq."

THE new telegraph lines in course of construction in Salvador, Central America, are nearly completed.

(Written for *The Telegrapher*.)**The Beautiful Snow.**

"Oh! see, mamma!" said a sweet little girl,
 "Do look at the beautiful snow!
 And just watch the tiny flakes as they whirl,
 As hither and thither they go!"

"I love to gaze as it silently falls,
 Till it glistens and glitters below,
 But sorry I am that it cannot remain
 The same sweet and clean pretty snow."

"My child," said mamma, "you soon will find out,
 As along the wide world you go,
 That a moral may quickly be deduced
 From your brilliant and charming snow."

"When 'tis first on the ground, so pure and bright,
 It is pretty enough, I trow;
 But very soon after—O my, what a sight—
 How changed is the lily-white snow!"

"Then look how it strikes those poor girls, so tired,
 As shivering they walk to and fro—
 And find it so false, though so much admired—
 That flimsy and slippery snow."

"That girl is trying a letter to read,
 Perchance from some long absent beau;
 Of the joy it brings she stands much in need,
 But it's withheld by the pitiless snow."

"I rule here," says the snow—"you feel my might,
 As shivering you walk to and fro—
 And tho' you are muffled in furs, my bite
 Will make you remember the snow!"

"So remember, my child, that what you speak
 Must be the whole truth, you know;
 Nor ever alone behold the bright side,
 Not even of the beautiful snow."

MORAL.

The girl grew up, and the words on the snow
 Were remembered for many a day;
 Especially once, when she said "Not for Joe!"
 And left one-forty-five Broadway!

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, May 18.

TO THE EDITOR OF THE TELEGRAPHER.

It is understood that Mr. Washburne will succeed in obtaining a unanimous report from the Select Committee on the Telegraph to the House, in favor of his bill. His report has been ready for some time, but as he has no expectation of obtaining any action on the subject beyond the printing of his report at this session, he is in no hurry to bring it in. Besides this, the committee desire that all parties who wish to do so may have an opportunity to make statements or arguments for or against his scheme, so that it may not be charged that ample opportunity was denied to both sides to present their case.

The Pacific Submarine Cable project of Mr. Cyrus W. Field continues to receive increased attention and interest as its importance is developed.

The enterprise is warmly favored by the President, Gen. Sherman, Vice-Admiral Porter, and other prominent members of the Government, and by numerous members of both Houses of Congress.

The distances, in nautical miles, by the proposed line, are as follows: From San Francisco to the Sandwich Islands, 2,080; thence to Midway Islands, 1,140; thence to Yokohama, Japan, 2,260; thence to Shanghai, 1,035 miles. To this is to be added one sixth of the whole, to make statute miles (1.086 miles), and also the usual twenty per cent. allowance for slack in paying out cable (1.520 miles), making the whole length of cable required to connect San Francisco, Cal., with the Sandwich Islands, Japan and China, 9,121 miles.

Mr. Field has had several hearings before the Senate Committee on Foreign Relations on the subject, in which he has forcibly presented the merits and advantages of the proposed line, and in view of its national importance, the propriety and necessity of Government assistance. As there seems to be an objection in the minds of Senators to the proposed grant of land, he has submitted a new bill in place of the one originally presented, providing for a subsidy of \$500,000 per year, for twenty years, as a consideration for the use of the cable an hour each day by the Government, provided that the cable shall be laid within five years.

Among the incorporators in the new bill are Cyrus W. Field, Peter Cooper, M. O. Roberts and Prof. Morse. It is probable that the committee will soon report the bill to the Senate, with the subsidy clause as proposed.

Vice-Admiral Porter has written a long letter to Mr. Field, strongly favoring the proposed Pacific Cable, and expressing a decided preference for the route by the Hawaiian Islands. He says:

"I am of opinion that telegraphic communication between California and China is a necessity, and that the sooner Congress takes a substantial interest in the matter the better it will be for the country."

"Our statesmen are now engaged in devising means of resuscitating American commerce, and snatching from the English the supremacy they have gained by permitting rebel cruisers to fit out in British ports against our mercantile marine."

"I am satisfied that we shall succeed in this object, so near to every American heart, and so necessary to our welfare as a nation."

"In connection with this commerce your telegraphic cable will be indispensable; and, even if Congress gives no aid, it must eventually be established."

Mr. W. C. Barney appeared before the same committee on Tuesday morning, on behalf of his projected cable from Belgium to the United States. He stated that all he asked was permission to land the cable, and did not desire any assistance or subsidy whatever. There seems to be no reasonable objection to granting the privilege upon these terms. The Belgian concession gives to the citizens of this country the exclusive right to lay cables for twenty years, and the grantees offer the Government a half hour's free use of the cable daily.

Aside from the above nothing of interest, telegraphically, has transpired here during the past few days.

CAPITOL.

Salaries Tending Upward.—Telegraphic Personals.

CHICAGO, May 3d.

TO THE EDITOR OF THE TELEGRAPHER.

I HAVE just learned that some of the salaries in this office are to be increased to the old standard, which was \$95 per month for the two or three operators who worked the crowded wires, and \$96 per month to a portion of the remainder. The advance is to be made in view of the fact that competent men will not work for a boy's stipend. Operators are abundant in Chicago and throughout the West, but reliable parties cannot be had for the asking.

The question has often been asked, and never answered, why the hours in the Chicago office of the Western Union Co. are one hour per day longer than in other city offices in the United States? In New York, Philadelphia, Cincinnati, St. Louis, and all other large offices, day men average but nine hours per day—here the average is ten. Mr. F. C. Swain, the chief operator, is undoubtedly vested with sufficient authority to make a change that will equalize the hours of this office with those of other points. There is one thing certain, which is that we should have easier hours. Ten hours per day will ultimately injure the best constitution and cause consumption in three cases out of five. This subject will be agitated until the proper parties evince a disposition to do better.

Many of the old "stand-bys" leave us this month. Korty goes West on the 15th, Greene has gone into a lawyer's office, F. Edwin Angel contemplates spending the summer months in Northern Ohio; several others are making arrangements to try their fortunes elsewhere. Mr. John Leatch will depart for California on or about the fifth. You will be pleased to hear that the Colonel and the General are enjoying excellent health. The pneumatic tube, which the Colonel stated was only experimental, has proved a success. Business is very lively, but operators in want of employment will do well to keep away from this city, as the pay is less and the hours longer than in any other large telegraph office in the country.

OPERATOR.

Telegraph Matters at the Capital.—A Ridiculous Charge.

WASHINGTON, D. C., May 15.

TO THE EDITOR OF THE TELEGRAPHER.

ASIDE from Congress and the various telegraph schemes before its committees, in regard to which your correspondent CAPITOL keeps you well informed, there has been of late little here of interest telegraphically.

It is understood, from reliable sources, that on the first of June there will be a consolidation of the Franklin and of the Pacific and Atlantic Companies, or at least of their principal offices here, and at other important points. Mr. Sewell Smith, now the manager of the Franklin office in Philadelphia, is to take charge of the consolidated offices in Washington, and Mr. J. G. Garland, the present manager, to be removed. I have no desire to interfere with the internal arrangements of the two companies referred to, but consider it questionable whether the change is politic, or likely to prove advantageous. Mr. Garland has certainly served the Franklin Company faithfully, and has succeeded in building up a good business for

that company here. From Mr. Garland's acquaintance with the various government departments, and other principal patrons of the telegraph here, the change is likely to prove unfavorable to the interests of the office. In case of his removal, and the establishment of a stranger in his place, he will probably take with him a large percentage of the business which has grown up under his care, and transfer it to one of the other companies. It would seem as though, after their previous experience, the managers of the Franklin Company should appreciate a good manager when they get one, and not relieve him from duty just as he has succeeded in getting things in excellent working order. It is to be hoped that the matter will be reconsidered.

In the office of the Western Union Company matters are very quiet. The fact is apparent that one or two persons exercise a most remarkable influence over their fellow employes in this office. Whether, these influential personages in all cases act according to the dictates of their own consciences, or upon the dictation of their superiors, is not so apparent. We are living in a strange atmosphere, and there are indications of early developments that may prove interesting.

It is seldom now that any mention is made of the late strike. Everything seems to have settled down as before, with the exception of salaries, which in many cases range at from ten to fifteen dollars per month lower. Many of the best operators have quit the business, and sought more remunerative employment. Out of those who struck here six have never returned to work for this company. One has entered the employment of another telegraph company, and five are engaged in other and more lucrative business.

The employes of the Bankers and Brokers' Company, under the cooperative plan, are making a strong effort to secure their share of the business here, and thus far have been very successful. They are determined that, if the plan should not prove successful, it shall not be the fault of the Washington office. The city has been thoroughly posted with advertisements, announcing the fact that the line is now conducted on the cooperative principle, and that every employé is interested directly and pecuniarily in doing the business in the most thorough and satisfactory manner, and asking the public for patronage.

In this connection it may be stated that a contemptible act was perpetrated a few days since at the Metropolitan Hotel. The B. and B. operators obtained permission from the proprietor to display some of their cards in the hotel, and some unknown malicious sneak took occasion to tear down and destroy them. It is to be hoped that the other companies had no hand in this dastardly outrage. The proprietor has set a watch for the perpetrator should the trick be again attempted.

The new Rule Book of the Western Union Company excites some comment among the operators in this office. Some of the rules are regarded as objectionable, and might have been omitted without detriment to the company's service. The grammatical construction of some of the rules would indicate a neglect of education on the part of the compiler, which would render at least a three months' term in some first class colored school advisable and advantageous.

The lines of the Southern and Atlantic Telegraph Company, now under construction by Mr. A. J. Baldwin, will be run into the Franklin office here. Mr. Baldwin expects to have the line working through to New Orleans in the fall.

Mr. L. R. Hoopes, an old ex-telegrapher, gave us a call this week, as he passed through from Columbus, Ga., on his way to New York.

A very ridiculous attack was recently made at the Capital upon the Editor of THE TELEGRAPHER, by some of the friends of the Postal Telegraph schemes. During the conversation it was stated that it was generally believed that you were paid by the Western Union Company to oppose the various schemes of Hubbard, Washburne and others. As the affection (!) of the Western Union officials for you and for our organ is so well known, any defence was scarcely needed, but the statement was emphatically denied, and full confidence expressed in your integrity. The difficulty experienced in bringing Congress and the people to look favorably upon these schemes aggravates their friends, and they at once impute to their opponents venal motives, without the slightest evidence to substantiate their charges. They claim that the Postal Telegraph system is very generally endorsed by the operators of the entire country, and that consequently THE TELEGRAPHER should advocate it.

PERDU.

The Feeling in Cincinnati.—Telegraphic B. B. Club.

CINCINNATI, O., May 17th.

TO THE EDITOR OF THE TELEGRAPHER.

OUR "village" has been pretty well represented in your columns of late, but having a few items, I will send you a brief communication.

The operators here do not undergo much more bad

treatment now than before the strike, and complaints were "few and far between" then. The officers here have invariably treated the men with kindness and respect, and we doubt if there is an office in the States where there exists as much good feeling between employer and employé as here. As the warm season has now fairly set in the Base Ball fever has again broken out. The "Night Owl" club practice twice a week, and is composed of the following members, most of whom engaged in "tossing the ball" last season:

Furr,	s. s.	Snyder,	1st b.
Higdon,	p.	Kern,	2d b.
Smith,	c.	Clark,	3d b.
Stephenson,	r. f.	Gilliland,	1. f.
Scobell,	c. f.		

The "Daylight" club effected an organization yesterday, as follows:

Selden,	s. s.	Brittain,	3d b.
Newman,	p.	Williams,	1. f.
Wilson,	c.	Hamilton,	c. f.
Gould,	1st b.	Kinney,	r. f.
Newton,	2d b.		

The statement in your issue of April 30th, in regard to Selden's playing with the P. and A. club, was a mistake on the part of your worthy correspondent.

As I said before, from all I can learn, there are but few complaints to be heard from the men here, except as regards salaries, which are low. The strike, although failing in some points, did not fail in one. None here will deny but that it *raised* the salaries. Some of us are *bored* by the *raise*, because we can hardly *raise* our *board*, but hope there are better times coming. Great improvements are to be made here, and they are busily engaged painting, cleaning, &c. When all is finished I will try and give you some idea of arrangements, &c. **ALERT.**

To Correspondents.

BLONDE.—The Insurance Bureau of the N. T. U. was discontinued last fall. The Telegraphers' Mutual Life Insurance Association, of which Mr. Gerrit Smith, No. 145 Broadway, New York, is Secretary, is still in operation, and numbers nearly 500 members.

PERSONALS.

MR. FRANK DRUMMOND, General Manager of the People's Telegraph Company, has changed his headquarters from Montreal to Quebec.

MR. T. S. CUNNINGHAM is Manager of the P. T. Co. at Quebec.

MR. JOHN STEWART is operator at Quebec.

MISS DE LA GORGONDIERE has been appointed Manager of Cape Santé, same company.

MISS A. M. KITTSON has been appointed Manager of Berthier office, Quebec, *vice* Mr. GEO. A. KITTSON, appointed Manager of Montreal office, P. T. Co.

REV. MR. PROVOST has been appointed Manager of People's Telegraph Co. at Maseoche, Quebec.

REV. MR. CHAMPEUX has been appointed Manager of the People's Telegraph office at Masson College, Quebec.

MR. LAMARCHE has been appointed Manager of St. Vincent De Paul office of the People's Telegraph Co.

MR. G. A. KITTSON has been appointed Manager of the Montreal office of the People's Telegraph Company.

MR. C. H. PARENT is working No. 1 Quebec, and Mr. **BOULET** No. 1 Ottawa, same company.

MR. J. M. GOUTLET has been appointed Manager of the St. Eustache, Quebec, office of the People's Telegraph Company.

MR. W. D. LARMONTH has been appointed Manager of the St. Andrews office, P. T. Co.

MISS PRIDHAM has been appointed Manager of the Greenville office, People's Telegraph Company.

MR. WOOLLY has been appointed Manager of the Thurso office, P. T. Co.

MR. G. P. DRUMMOND is Manager of the Ottawa office, P. T. Co., and Mr. **JOE QUELCH** is working the No. 1 line.

MR. C. DESJARDINS (Captain of a company of Red River volunteers), has accepted a position as Manager of (Hu) the House of Commons, Ottawa, People's Telegraph Company.

MR. JAMES COCHRANE has been transferred from Ottawa to Montreal, Montreal Telegraph Company.

MR. ED. H. BURD, Manager of the Western Union office at New Brunswick, N. J., and formerly a United States operator, has resigned, and will graduate as a physician next spring, he having been studying medicine for two or three years past. The company lose a faithful officer.

MR. WELLS, of the Western Union main office, at Washington, D. C., has resigned.

MR. HARRY HENRY, a young but good operator, has resigned from the Western Union main office, Washington, D. C., and goes to Cincinnati to complete his education.

MR. G. F. CLARK has been transferred from Fonda, N. Y., to night duty at the Schenectady, N. Y., office of the N. Y. Central Railroad line.

MR. M. PATTERSON has been appointed night Train Despatcher at Rawlins for the Laramie Division of the Union Pacific Railroad.

MR. JESSE R. MILLS, of the New York Franklin office, has resigned, and accepted a position in the Bankers and Brokers' office, at Philadelphia.

THE TELEGRAPH.

Official Statement, Western Union Telegraph Co.

	March, 1869.	March, 1870.
Gross Receipts.....	\$594,279 84	\$587,593 00
Expenses.....	373,645 09	386,476 04
Net Profits.....	\$220,634 75	\$202,117 96

FOREIGN TELEGRAPHIC NOTES.

IN South America lines are now being constructed across Chile to Buenos Ayres, and by cable to Montevideo, on the Rio de la Plata, where another land line carries the work forward to Rio Janeiro, in Brazil.

Two thousand miles of iron telegraph poles have arrived in Peru, for the use of the Peruvian National Telegraph Company, who are now constructing their land lines with energy.

The companies interested in the cables in southern waters have united in the purchase of a repair vessel, the *Suffolk*, which will be supplied with a complete engineering corps, improved machinery for submerging, grappeling, splicing &c., spare cables and instruments. She will rendezvous at Kingston, Jamaica. The vessel is 900 tons burden, has turcscrews that permit her to make short turns, so necessary in cable work, has half inch steel platings, and in all her arrangements is complete.

TELEGRAPHIC BREVITIES.

IN the United States the proportion of miles of telegraph line to population is 1 to 420; of wire, 1 to 238; of offices, 1 to 6,000; and of internal messages, 1 to 3.

IN Switzerland the proportion of miles of telegraph line to the population is 1 to 940; of wire, 1 to 448; of offices, 1 to 6,000; and of internal messages, 1 to 3 1-0.

For nearly a year past the police telegraph of Boston, Mass., has not been in working order, thereby entailing a good deal of trouble on patrolmen in transmitting messages between the police stations. It is to be repaired at once, and will soon be in good order again.

On Saturday morning last the Municipal Committee on street lights of Boston, Mass., gave a hearing to petitions to light the street lamps by electricity. The system was practically explained, and its feasibility apparently demonstrated.

The prospectus of a new ocean cable, between Wales and the coast of Rhode Island, to be laid next year, will soon be published. Ex-Senator Arnold, of Rhode Island, William T. Blodgett, Eugene Kelly, H. G. Marquand, and G. Ticknor Curtis will be the New York directors of the undertaking. The cable is contracted for, and is expected to be laid before September 1st, 1871.

Co-operative Telegraphing.

THE employés of the Bankers and Brokers' line have entered into an arrangement with the company, by which the entire business is placed in the hands of those who do the work, and the useless, cumbrous machinery of executive board, board of trustees, electricians, engineers, and other supernumeraries, most of whom have no practical knowledge of telegraphing, is thrown to the winds, leaving the earnings of the line to pay the actual expenses of working it, and the profits to be divided among those who earn them. We hope that this attempt to bring telegraphing down to a practical every-day affair, as any other business is conducted, will be noticed by those who have occasion to use the telegraph.—*Washington National Republican.*

Interesting Experiment in Working with Repeaters.

A SUCCESSFUL experiment over the Western Union Company's wires, of working long circuits through a number of repeaters, was tried at New Orleans on Sunday, May 15th.

MR. R. C. DUNCAN, chief operator, sent through nine repeaters—one at Rome, Ga.; Lynchburg, Va.; New York city; Pittsburg; two at Cincinnati; one at St. Louis.

Chicago and Memphis—the writing returned to New Orleans almost as clearly as when leaving the office, having passed through eighteen States and over 4,800 miles of wire, and the electric current traversing the distance in about three quarters of a second. The writing was translated as rapidly as on ordinary short wires. Plaster Cove was also in direct communication, and worked finely.

Presentation to a Telegrapher.

THE employés of the Franklin Telegraph Company, to the number of 25 or 30, met at the Sherman House last evening and sat down to one of Capt. Barney Hull's best suppers. After discussing the merits of the many good things remarks were made by Messrs. C. E. Loud and C. F. Hutchinson; the latter, in behalf of those in attendance, presented Mr. E. C. Fernald, one of their number, who is about to leave for New York, with a beautiful gold mounted writing desk. Mr. F. feelingly responded. Delegates were present from Lowell and other places.—*Boston Daily Evening Traveller.*

Humors of the Telegraph.

AN enterprising German, not thoroughly Anglicized as yet, recently electrified one of our telegraphic operators by handing him the following copy of a despatch, to go by the telegraph wire to New York Down:

"Vy yu no sent them guts—I veichts form!"

Hans was anxious about some goods he had written for.

New Patents.

For the week ending May 17, and each bearing that date.

No. 103,035.—ELECTRO-MOTOR ESCAPEMENT. Thomas A. Edison, New York.

Claim.—1. The combination of the click C, stop E, lever B, and toothed wheel A, with the electro-magnet G and armature H, substantially as and for the purposes herein specified.

2. The combination of the click D, stop F, lever B, and toothed wheel A, with the electro-magnet G, and armature H, substantially as and for the purpose herein specified.

3. The combination, with an electro-magnet, G, of a vibrating lever, B, provided with the stops E F, one or both, and clicks C D, one or both, arranged and operating substantially as herein specified.

4. The combination of the clicks C and D, stops E and F, lever B, spring S, toothed wheel A, armature H, and electro-magnet G, substantially as and for the purpose herein specified.

No. 103,072, ante-dated April 30, 1870.—CONDUCTOR FOR TELEGRAPHS. James Montgomery, New York.

Claim.—1. The flanged insulators J J, constructed as represented and described, when used in combination with a hollow railway rail, in the manner and for the purposes stated.

2. The couplings H, inserted in recesses in the rail ends, in the manner and for the purposes set forth.

3. The test-holes K, for the purposes specified.

No. 103,077.—ELECTRO-MAGNETIC MOVEMENT. Frank L. Pope, Elizabeth, N. J.

Claim.—1. The combination of a polarized switch with a relay magnet, placed in or operated by the same main circuit, substantially as and for the purpose set forth.

2. The combination of a polarized switch, relay magnet and local battery, with two electro-magnets actuated by said local battery, substantially as described, and for the purpose specified.

3. The combination of an apparatus for transmitting positive and negative currents with a polarized switch, relay magnet, local battery, and two electro-magnets, the whole combined, arranged and operating substantially as specified.

No. 103,122.—INSULATOR FOR TELEGRAPHIC WIRE. Robert Brockenridge Baker, Philadelphia, Pa.

Claim.—The combination with, or application to, telegraph wires, of metallic oxide, as an insulating medium.

No. 103,174.—ELECTRO-MAGNETIC RAILROAD ALARM. Thomas S. Hall, Stamford, Conn.

Claim.—1. The lever B, in combination with the key-lever L, rod X, and the divisions of a divided anvil, substantially as described.

2. The projection E' on the end of lever B, arranged beneath the head of the rail, substantially as and for the purpose described.

3. The divided anvil composed of independent parts O, supported in such a manner as to yield under the advance of the key-lever and press against the same, substantially as described.

4. The manner of operating the key lever which throws the anvil out of contact by means of the same spring F, which restores the lever to its elevation, substantially as described.

Recent British Patents.

Provisional protection for six months.

No. 1,041.—CROMWELL FLEETWOOD VARLEY, Beckenham, Kent. Improvements in electric telegraphs, April 8th, 1870.

No. 1,072.—MICHAEL HENRY, Fleet Chambers, Fleet Street, London.

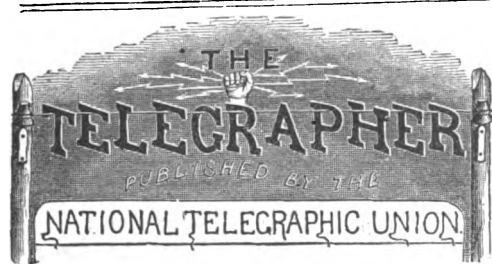
Improvements in telegraphic apparatus. A communication from the Société Digney Frères, et Compagnie, Boulevard St. Martin, Paris.

MARRIED.

BRESEE—VEDDER.—At Schenectady, N. Y., on the 12th inst., by the Rev. HORACE G. DAY, Mr. HERBERT V. BRESEE, of Suspension Bridge, N. Y., to Miss GRACE A., eldest daughter of JACOB VEDDER, Esq., of Schenectady, N. Y.

CLUTE—MULLIN.—In this city, Saturday, May 14th, CHARLES C. CLUTE to SARAH AGNES MULLIN, of St. Johns, N. B.

FOLLETT—MOORE.—At the Church of the Holy Cross, Troy, N. Y., Thursday, May 12th, by the Rev. J. I. TUCKER, assisted by the Rev. E. T. CHAPMAN, BENJAMIN T. FOLLETT, of the W. U. Telegraph Co., to Miss MAGGIE H. MOORE, all of Troy.



SATURDAY, MAY 21, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D.C.

Vice-President..W. O. LEWIS....New York.

Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.

Recording Sec..W. W. BURHANS...Box 6010, P. O., New York.

Corres. Sec....F. L. POPE.....Box 6010 P. O., N. Y.

WHY WE OPPOSE THE POSTAL TELEGRAPH.

OUR esteemed Washington correspondent, "PERDU," states that the Editor of THE TELEGRAPHER was the subject of some absurd imputations from the friends of the Postal Telegraph schemes, at the Capitol, lately. We have enjoyed a very hearty laugh over the incident, and have no doubt but that our very good (?) friends of the Western Union Company will also find the statement that we are subsidized by that company very amusing. In view of the relations between the managers of that concern and THE TELEGRAPHER and its Editor, especially since last January, there is a richness about this affair that renders it something more than amusing. We fear that our Congressional friends have become so accustomed to the demoralizing influences of the Capitol that they cannot conceive the possibility of anybody advocating or opposing any measure in which he is not personally interested, unless paid therefor by somebody. It seems that our course is also denounced because, as is claimed, we do not reflect the sentiments of the majority of the telegraphic fraternity in this matter of a Postal Telegraph, and it is charged that *therefore* we must be paid for it in some way.

We do not intend to defend ourselves against any such absurd charges. To those who know us no defence is necessary. To those who do not know us assertions and protestations would, of course, add nothing to the case as it stands. We can only pity the fools or knaves who can conceive no higher standard of action than mere pecuniary compensation.

Once more, then, we state the reasons why we oppose a Government control of the telegraph. In the first place, because the less the Government has to do with any business not strictly in the line of its duties and functions the better. In the second place, however imperfect and faulty the present telegraph system may be, a Government telegraph in this country, relieved of the responsibility now resting on telegraph managers, and subject to partisan influences, as it must inevitably be, could not but prove far worse. In the third place, it is clearly not for the interests of operators and other telegraph employes that they should become the dependents of a political party, and competition having been destroyed, should be compelled to accept whatever situations and compensation the party in power for the time being should see fit to accord them. And last, but not least, the system would cost the treasury tens of millions of dollars, and an annual deficit far exceeding that of the Post-office Department now, and this when the whole land is groaning under the burdens of taxation.

As regards THE TELEGRAPHER, its Editor does not own the paper, and can be changed at any time by the vote of the Executive Committee of the National Telegraphic Union. Let those who are displeased at its course appeal to the Executive Committee, and we have

no doubt but that their representations will be respectfully considered, and, if a change of management shall seem desirable, the present Editor certainly will not stand in the way of its being made.

The Resistance of Relay Magnets.

THE employment of relay magnets of excessive resistance has for a number of years constituted a great and growing evil in the American telegraphic system. This evil has, however, at length become so apparent that a decided reaction has set in, and we are glad to note a general tendency at the present time among telegraph managers to use magnets of much lower resistance than has hitherto been customary. There is danger, however, that this reform, like many others of equal value, may be carried too far. We are informed that one of our telegraph companies is now equipping its lines with relays measuring only about 60 ohms each—equivalent to perhaps 3 or $3\frac{1}{2}$ miles each—which, although well suited for railway or other lines of moderate length, crowded with numerous stations, are not well adapted to secure the best results upon average circuits.

On the great majority of lines in this country, especially upon railway lines, the instrument resistances are altogether too high; but the expense attending a general reconstruction of the relays has doubtless, in many cases, operated to prevent the consummation of this desirable reform. Our attention has recently been called to a device invented by Mr. W. W. SMITH, of Cincinnati, Ohio, in which, by simply changing the connections of a relay, at little or no expense, its resistance is reduced 75 per cent. without impairing its relative efficiency, and which renders the relay thus changed, in every respect, as effective as one of equal resistance connected in the usual manner.

Mr. SMITH's improvement consists in arranging the connections of a relay so that the main circuit is divided, one half passing through each helix, and uniting again on the opposite side, instead of having the conducting wire of the two spools continuous, as in the usual manner. It will be seen upon a moment's reflection, that, by changing the connections of a magnet of the usual form, and arranging them upon Mr. SMITH's plan, that the total resistance will be reduced one fourth of the original amount, while the two helices will exert their magnetic influence in conjunction upon the soft iron cores, as usual.

To illustrate the benefit which may be derived in many instances by making use of Mr. SMITH's invention, we will give an example.

Suppose a telegraph line of 150 miles of No. 9 wire, with 25 stations, which would fairly represent many of the railroad lines in the United States. Such a line would give a resistance of say 15 ohms per mile. The average resistance of the instruments would not probably be less than 300 ohms. The effective force of current in every circuit being equal to the quotient of the electro-motive force divided by the resistance, if we call the force of battery 1,000 we have

Resistance of 150 miles of line....	2250 ohms.
" 25 relays	7500 "

Total.....	9750
------------	------

the resistance of the battery being so small in this case that it need not be taken into account.

Dividing the battery force, 1000, by total resistance, as above, gives as the strength of current on line, .102, the magnetic effect being of course proportionate.

Now, suppose the relays connected, as in Mr. Smith's plan, without making any other change in the arrangements, we then have

Resistance of line, as above.....	2250 ohms.
" 25 relays.....	1895 "

Total.....	4125
------------	------

Dividing the battery force by this amount as before, gives us, as the value of the line current, .212. In consequence of the line current being divided between the

two helices of each relay instead of the whole necessarily passing through them, the magnetic effect will be half the above, or .121, showing a gain of 19 per cent. in actual strength of current acting upon each relay.

But a more important advantage arises from the improvement in the working of the line under conditions of defective insulation, or in wet weather. The proportionate amount of current entering one end of the line, which will reach the other end, depends upon the ratio between the resistance of the insulation and that of the conductor. The greater the former in comparison to the latter the better will the line work.

Supposing the above line insulated with glass and bracket, in good order, with 40 poles per mile, its insulative resistance in a hard rain would not exceed 250,000 ohms per mile, while its average conductivity resistance, including instruments, is, in the first case, 65 ohms per mile. The mileage ratio in this case, therefore, is 250,000 to 65, or as 3846 to 1, while in the second case, in like manner, we find it to be as 9259 to 1, and the working condition of the line will be found to have improved in proportion, without any change whatever in the absolute insulation. By using a better insulator than the glass and bracket the insulative resistance might be increased enormously, and the condition of the line made correspondingly better.

The above example will serve to show what a vast improvement may be made in the working of a line in many instances by means of Mr. SMITH's invention, at an expense so small as scarcely to be worthy of mention.

We understand that an application is now pending for a patent upon the above device, and any further information can doubtless be obtained by addressing the inventor, at the office of the I. C. & L. Railroad, of which he is now the Vice-President.

Information Wanted

of the whereabouts of Mr N. E. JACOBS, formerly of California. When last heard from he was at Ogden, Utah, bound East. He is a telegraph operator. Any information in regard to him may be communicated to the Editor of THE TELEGRAPHER.

Removal of Gray & Barton.

MESSRS. GRAY & BARTON have removed from No. 13 La Salle street to No. 497 State street, Chicago, Ill. This firm, though recently established at Chicago, have already succeeded in securing a good share of patronage, and their work is satisfactory, and highly creditable to them, and in their new location they have secured increased facilities and more ample accommodations.

The Testimonial to Prof. Morse.

IN response to the desire of many telegraphers not employed by the Western Union Company, the subscription to the proposed testimonial to Prof. S. F. B. MORSE will not be confined to the employes of that company, but subscriptions are now invited, and will be welcomed from all telegraphers, past or present. Subscriptions should be forwarded to Mr. J. D. REID, Chairman, at 145 Broadway. We have, of course, received no official information in regard to the proposed testimonial—such courtesies not being characteristic of the parties having this matter in charge—but publish the fact as one of interest to our readers.

Prof. Loomis on Mont Blanc.

It has long been known that telegraphic messages could be transmitted without the use of wires, and many years since signals were sent across the Bristol Channel by the use of the water as the conducting medium; but in that case the water through which the signals passed was inclosed in a tube, so that it was, in truth, only the substitution of a wire of water, if the term can be used, for the metallic wire usually employed. Prof. Loomis now proposes to go further; he claims to have discovered a mode of transmitting messages by electrical air currents, and is seeking an opportunity for making experiments on the summit of Mont Blanc.

THE LECLANCHE MANGANESE BATTERY.

A lot of the above BATTERIES just received.

They are furnished all complete, with the necessary chemicals to put into immediate action.

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109 COURT ST.,
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Owing to the decline in gold, and other circumstances, we are now supplying our superior quality of

GALVANIZED WIRE

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FOR SALE,

Shares of ATLANTIC & PACIFIC TELEGRAPH STOCK, at almost any price that may be offered.

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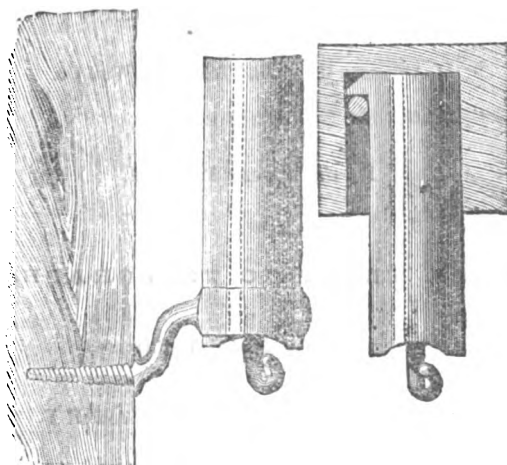
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SOLE AGENTS FOR THE UNITED STATES.

The improvements introduced in the construction of this Insulator make it, beyond question, the BEST.

Its insulating properties exceed those of the glass a hundred thousand fold.

In strength and durability it has no equal.

They are warranted not to break or part.

They are made with a screw shank, to fasten into the pole, price 38 cents each, or without the screw, for cross-arms, 30 cents each.

Pamphlets furnished, with full description, A stock of the Insulators always on hand at our stores.

THE BROOKS' INSULATOR, with the PATENT COMPOUND WIRE and our PATENT MAGNETS, constitute the best Telegraph Lines ever constructed.

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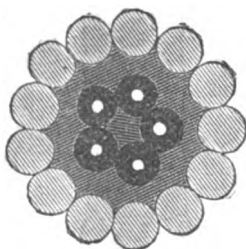
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SUBMARINE TELEGRAPH CABLES,

INSULATED WIRES, for

TELEGRAPH AND ELECTRIC USE, and for

BLASTING AND MINING PURPOSES,

in every variety desired.

As an Insulation for Telegraph Cables and Electric Conductors GUTTA-PERCHA has been universally adopted by all scientific and practical Electricians and Manufacturers of Telegraph Cables and Wires in this country and Europe, and has sustained, with increasing confidence in its superiority, the practical test of over twenty years' general use.

The PROPRIETOR would say, to all parties desiring

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that he will guarantee to make and deliver at his Factory any style of Cable, Insulated with Gutta-Percha, as low as they can IMPORT Cable of the same style and quality.

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have been appointed by me GENERAL AGENTS for the sale of any Telegraph Cable or Wire manufactured at the Works in New York, at Factory Prices, delivered in New York.

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SUBTERRANEAN & AERIAL WIRES,

OF THE

HIGHEST INSULATION.

CHARLES T. & J. N. CHESTER,

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EXCLUSIVE AGENTS

offer for sale, as TELEGRAPH and ELECTRIC CONDUCTORS, Wires protected by the BEST INSULATOR and STRONGEST RESISTANT TO CHEMICAL ACTION and ATMOSPHERIC INFLUENCE.

After the experience of several years in the use of KERITE for purposes of insulation, we have concluded to adopt it as the very best substance for wire covering, not only for use of offices but for SUBTERRANEAN, SUBMARINE and AERIAL LINES. We have used it unprotected for years under ground, and exposed to the most injurious atmospheric influences—to heat, cold and moisture—and have yet to learn its failure, when other ordinary insulating substances would have been rapidly destroyed. UNDER WATER it has retained an electrical charge for many hours, thus ranking it in the HIGHEST GRADE of NON-CONDUCTORS.

We have, therefore, made arrangements not only to secure THE EXCLUSIVE AGENCY for its sale, for the purposes for which we have already sold it so largely, but to furnish complete

IRON-CLAD CABLES,

of the usual size, with KERITE COVER, believing that it will exceed, in insulation for submarine purposes, ANYTHING HITHERTO MANUFACTURED.

We shall be happy to furnish estimates for any amount and size of cable, which will be found to compete with any other construction, both in quality and price.

In corroboration of our statements we append extracts from reports of those who have exposed it to the severest practical tests.

From Prof. SILLIMAN, of Yale College, Nov. 10, 1868.

"I am satisfied, as the result of my own researches, that ozone is by far the most fatal of atmospheric influences. I have submitted portions of KERITE to the action of a highly ozonized air for a sufficient length of time to prove them, and at the same time have exposed the best English Gutta-Percha Covered Cable to the same tests, with the following result: After long experience KERITE resists perfectly. The best English Gutta-Percha Cable was speedily destroyed. A few days' exposure to ozone would produce more effect than many years in a normal atmosphere, exposed to carbonic disulphide, nitric acid, sulphuric acid, sulphuric dioxide, nitric peroxide, chlorine gas and alkaline hydrates. Gutta-Percha is immediately dissolved in carbonic disulphide, and powerfully acted upon by alkaline hydrates. Some samples of KERITE resist the action of the former in a surprising manner, and are completely unaffected by the latter."

"NEW YORK, May 14, 1870.

"In nearly two years since the foregoing was written I have made a considerable number of experiments upon the KERITE Compound of A. G. DAY, all of which tend to confirm former results; while the practical test of the continued use of electrical conductors covered with it, and the growing favor with which they are received by electricians, offers the best guarantee of its permanent value.

"B. SILLIMAN."

From MOSES G. FARMER, of Boston, Mass.

"I have tested 195 feet of this wire, and found it a better insulator than Gutta-Percha.

"The instrument used would have shown a current through 300,000 miles of Telegraph wire. The 195 feet showed no leakage in water. The KERITE insulated wire withstands atmospheric agencies wonderfully, and will last for years when exposed to the atmosphere; likewise, when buried in the earth, there is no reason to apprehend decay. It is a well known fact that Gutta-Percha deteriorates very rapidly when exposed to atmospheric influences, and therefore cannot be advantageously used for the covering of wire for out-door exposure unless buried in permanent moisture."

From Mr. E. A. CALAHAN, Supt. Gold and Stock Telegraph Co., May 14, 1870.

"Under all circumstances it has given me the fullest satisfaction. The peculiar nature of our business renders it necessary for us to use the most perfectly insulated wire. I have tried several kinds of insulated wire, but have been compelled to take down and substitute KERITE instead. Wire strung a year since is as good as the first day put up. Have tested it after three days' constant rain and could not find one degree of escape. We use it in gas pipes, and sometimes placed near furnaces subject to very high temperature. I have not been able to detect the slightest change from its original condition.

"We have exposed it to the extreme cold and heat of the past two years and a half, strung over the roofs of buildings, which we consider the best test of its indestructible and insulating qualities."

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TELEGRAPHIC
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Manufacturers of, and dealers in every variety of
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KERITE (OR HORN COVERED) COPPER OR COMPOUND WIRE OR CABLES,
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BLASTING APPARATUS, CARTRIDGES, BATTERIES, &c., &c.
CALCIUM LIGHTING APPARATUS,
MEDICAL BATTERIES,
INDUCED AND DIRECT CURRENTS;
ELECTRO-PLATERS' BATTERIES AND MATERIALS,
ELECTRO GONGS, OF ANY DESIRED SIZE OR WEIGHT,
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PATENT APPARATUS FOR THE MANUFACTURE OF NITRO-GLYCERINE, ELECTRICAL CLOCK WORK,
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They guarantee to give satisfaction to all who favor them with orders, in the promptness of execution and in the quality of articles supplied.

Also, have on hand and for sale,
MODERN PRACTICE OF THE ELECTRIC TELEGRAPH.
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F. L. POPE.

AMERICAN
COMPOUND TELEGRAPH LINE WIRE.

COPPER FOR CONDUCTIVITY.

STEEL FOR STRENGTH.

The superiority of the COMPOUND TELEGRAPH WIRE, compared with iron, consists in its LIGHTNESS, reducing by over fifty per cent. the number of poles and insulators required;

Relative TENSILE STRENGTH, homogeneity and elasticity—decreasing the liability to breakage from cold weather, sleet, etc.;

CONDUCTIVITY—insuring great improvement in the working of lines in any condition of the weather;

And in its DURABILITY, which greatly exceeds that of the best galvanized iron wire;

Altogether resulting in a very great reduction in the cost of maintaining and working telegraph lines, while, at the same time, insuring

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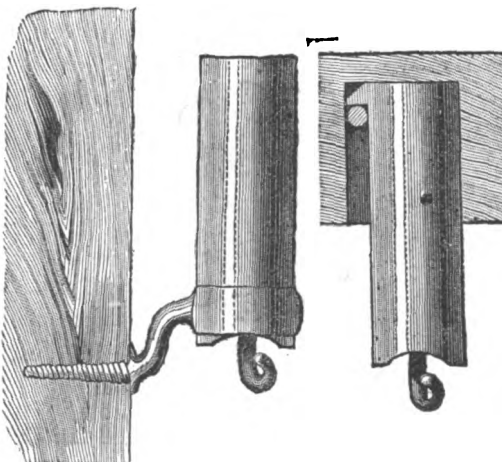
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This Insulator shows a resistance of 100,000,000,000 B. A. Units, exceeding ordinary Insulators in humid weather fully one hundred thousand fold.

Its great strength and durability make it the most economical Insulator in use.

Every report received from them is of the most favorable character.

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OF EVERY DESCRIPTION.

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Ogden's Improved Carbons, with the Immersed Platina Connection.

Agents for pure Nitric and Sulphuric Acids, manufactured by the Lodi Chemical Works.

" C. F. Varley's Patent Paraffine Insulator.

" Gutta-Percha covered Wire and Cables American Manufacture.

" the best Manufacture of Plain and Galvanized Iron Wire.

" of American Compound Telegraph Wire Co.

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OF

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Publishers of Prof. J. E. SMITH'S

MANUAL OF TELEGRAPHY.

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Respectfully inform their Customers, and all parties purchasing

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GENERAL AGENTS for the sale of any articles manufactured by him for

TELEGRAPHIC AND ELECTRIC USE.

They are now prepared to fill promptly any orders for goods on hand, or to be manufactured, at the Manufacturer's prices in New York.

The long experience of Mr. SAMUEL C. BISHOP, in the manufacture of

PURE GUTTA-PERCHA GOODS,

and the reputation he has gained and enjoys for the superior quality and perfection of manufacture of

SUBMARINE TELEGRAPH CABLES

AND

INSULATED WIRES

of various kinds, insulated with

PURE GUTTA-PERCHA,

renders this arrangement a very important one for our numerous patrons throughout the country, and we confidently recommend these goods to their especial notice as being

FULLY EQUAL, IF NOT SUPERIOR,

to any other in use.

THE PRINCIPAL ARTICLES manufactured and offered for sale are

SUBMARINE TELEGRAPH CABLES,

(Any size required).

Gutta-Percha covered Telegraph Office Wire, in great variety of size and style.

SUBTERRANEAN WIRES, covered with Gutta-Percha and Lead outside, various sizes.

SUBTERRANEAN WIRES with Gutta-Percha and braided fibre, and BISHOP'S PATENT COMPOUND outside.

SUBTERRANEAN WIRES, with Fibre and Bishop's Patent Compound outside.

POLE LINE CORDAGE, with Fibre, and Bishop's Patent Compound outside.

BRIDGE'S PATENT Electric Cordage.

BRIDGE'S PATENT Double Covered Cordage.

BISHOP'S PATENT COMPOUND WIRE,

or out-door use and office connections.

INSULATED WIRES,

with two Conductors, both plain and with braid outside, and a great variety of other kinds made to order.

COTTON AND SILK-COVERED WIRES, both twist and braided.

This arrangement,

TOGETHER WITH OUR OWN

EXTENSIVE MANUFACTORY in NEW YORK,

and our great variety of TELEGRAPH MATERIAL in stock, fully establish our claim that our stores are the

DEPOTS OF TELEGRAPH SUPPLIES in THIS COUNTRY.

IMPORTANT TO TELEGRAPH MANAGERS.

Hereafter all Magnets of our manufacture will have the resistance plainly marked upon each.

MAGNETS supplied of any resistance required.

We have in stock 200 miles No. 8, Best Quality GALVANIZED WIRE, which we offer at Six Cents per lb., Gold.

Also, Nos. 9 and 12, at Lowest Market Rates.

L. G. TILLOTSON & CO.,

8 DEY STREET, N. Y.

RUSSELLS' American Steam Printing House

28, 30 & 32 CENTRE STREET, N. Y.

EXECUTES ALL DESCRIPTIONS OF

Book, Job and Commercial Printing.

TELEGRAPH PRINTING A SPECIALTY.

PREMIUMS! PREMIUMS!!
FOR THE SPRING OF 1870,
TO THE FRIENDS AND SUPPORTERS
OF
"THE TELEGRAPHER."

It has been the custom of the present publisher and editor of
"THE TELEGRAPHER"

to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to

INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES AND INJUSTICE practised by them upon its employees, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

The President of that Company, however, distinctly disavows this action, and says, in a communication to the editor of THE TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S) 'discontinuance and discountenance' a test of competency for our service."

It will be seen, therefore, that this movement is one incited on the part of certain of the subordinate officials of that Company by personal spite and chagrin, because the paper has remained UNSWERVINGLY FAITHFUL to the interests of the Practical Telegraphers of the country, and could not be used for the personal ends of these disgruntled officials.

It remains to be seen whether the Practical Telegraphers of this country CAN BE RELIED UPON to stand by those who seek to secure to them JUSTICE AND FAIR TREATMENT.

In addition to the inducement offered above to exertions in support of the paper, we offer the following

LIBERAL PREMIUMS FOR NEW SUBSCRIPTIONS.

This offer will be good until May 31st, 1870.

For TWENTY-FIVE SUBSCRIBERS we will give to the person sending the names and money a

NO. 1 BOX RELAY (WARRANTED).

For TWENTY SUBSCRIBERS a No. 1 TELEGRAPH KEY, either Caton or Self-Closing, as may be preferred, and a copy, either of "Modern Practice of the Electric Telegraph" or "Sabine's Electric Telegraph."

For FIFTEEN SUBSCRIBERS a No. 1 TELEGRAPH KEY, any pattern that may be desired.

For TEN SUBSCRIBERS, the Fourth Edition of "Cully's Handbook of Practical Telegraphy."

For SIX SUBSCRIBERS, "Noad's Inductorium" and "Sabine's Electric Telegraph."

For THREE SUBSCRIBERS, F. L. POPP'S "Modern Practice of the Electric Telegraph."

In addition to the above, we will give to the person who shall, on or before the 31st of May, send us THE LARGEST LIST OF SUBSCRIBERS, not less than FIFTY,

A TWENTY DOLLAR GOLD COIN!

For the second largest list, not less than THIRTY-FIVE,

A TEN DOLLAR GOLD COIN!

Subscriptions must be for one year, or equivalent to that, and at the regular subscription price of the paper,

TWO DOLLARS PER YEAR.

Subscriptions for less than a year will be counted as fractional parts of one subscription.

Any of the Premiums offered may, at the option of the receiver, be changed for other articles of equal value.

Remittances may be made by Post-office order or registered letter, at the risk of the paper. From remittances of not less than Five Dollars the expense of the money order or of registering the letter may be deducted.

AMERICAN FIRE ALARM AND POLICE TELEGRAPH, GAMEWELL & CO., Proprietors, 104 Centre Street, N. Y.

This system of Fire Alarm Telegraph, with a central office, or upon the

AUTOMATIC PLAN,

is now in operation in the following cities, to which reference is made for evidence of its great superiority and value, and UNIFORM reliability:

BOSTON,
CHICAGO,
PHILADELPHIA,
CINCINNATI,
ST. LOUIS,
BUFFALO,
BALTIMORE,
MOBILE,
NEW ORLEANS,
PITTSBURG,
LOUISVILLE,
ALLEGHENY,
MONTREAL,
QUEBEC,

PORTLAND,
ST. JOHN, N. B.,
HARTFORD,
TROY,
NEW HAVEN,
ROCHESTER,
SPRINGFIELD,
TOLEDO,
ALBANY,
COLUMBUS,
LAWRENCE,
MILWAUKEE,
SAN FRANCISCO,
CAMBRIDGE,

WASHINGTON, D. C.

THE DISTINCTIVE FEATURES OF THE

AMERICAN

FIRE ALARM TELEGRAPH

are a Combination of Circuits, the Automatic Signal Boxes, Electro-Mechanical Bell and Gong Strikers.

THE AMERICAN FIRE ALARM AND POLICE TELEGRAPH is covered by some twenty patents. Very early after its introduction into Boston, GAMEWELL & Co. purchased the original patents of FARMER & CHANNING, and during the past fifteen years have spared no expense or pains to improve and perfect this system.

Any information desired in regard to the above system will be cheerfully and promptly furnished upon application at the office. A pamphlet, setting forth more fully its advantages and superiority, has been printed, and will be supplied to Municipal Authorities and others interested in Fire Alarm and Police Telegraphy, upon application as above.

DR. L. BRADLEY,

AT NO. 7 EXCHANGE PLACE,

Jersey City, N. J.,

Keeps constantly on hand and for sale his

Improved Telegraph Instruments

Having adopted the use of

OREIDE METAL,

which is much RICHER and FINER than brass, he now presents his work in a style and of a quality that are unsurpassed. His relays were awarded the

FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same.

He is also manufacturing the

IMPROVED BUTTON REPEATER,

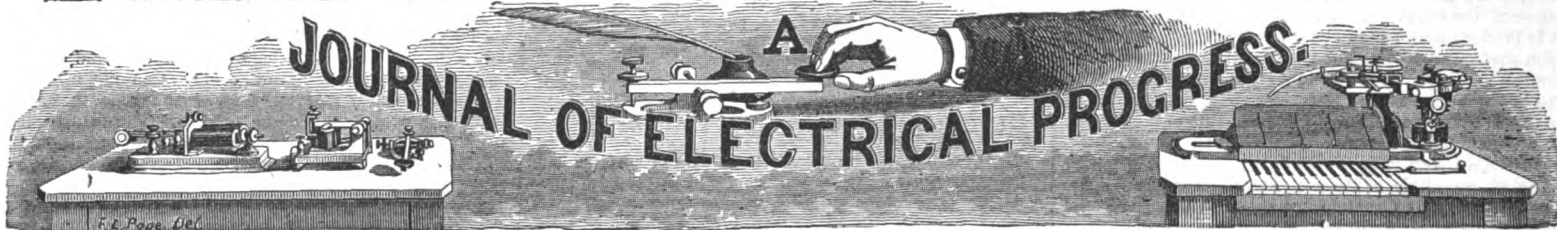
the cheapest, most reliable and simple repeater as yet invented

PRICES.

Button Repeaters.....	\$5 00
Relays, with helices in bone rubber cylinders (very fine).....	19 50
Small Box Relays.....	16 00
Medium Box Relays.....	17 00
Main Sounders, some as the above, with heavy armature levers without local connections, 75 cents less.	
Pocket Relays, with all the adjustments of the above, and good Lever Keys.....	22 00
Excellent Registers.....	40 00
Pony Sounders.....	6 75
Keys.....	6 50

All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package. He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

THE TELEGRAPHER.



Vol. VI.—No. 40.

New York, Saturday, May 28, 1870.

Whole No. 202.

[From the *Mechanics' Magazine*.]

THE WEST INDIA AND PANAMA TELEGRAPH COMPANY.—THE CUBA TELEGRAPH COMPANY.

THE objects of these two companies being so intimately allied, the description of cable similar, the works carried out at the same time, make it a rather difficult matter to separate them in giving a description of the general work. We shall, therefore, in the following remarks, treat them more as one work than as two companies.

As regards the length of line required for the submarine portion, this cable is only exceeded by the British-Indian and French-Atlantic submarine cables; but, as regards the difficulties attending the work, it is probably, without exception, attended with more work and more difficulties than any submarine cable previously laid. The mere fact that about thirty-six shore ends will be required to be laid is sufficient proof of the amount of trouble to be anticipated.

The entire contracts embrace about 3,153 nautical miles of submarine cable, and about 350 miles of land line, and the whole system, when completed, will connect Cuba with Jamaica and Panama, and with the major portion of the West India Islands. On the completion of the system we shall be in telegraphic communication with South America.

The first portion of the work connects Havana with the port of Batabano, on the opposite side of Cuba, by means of a land line; from Batabano a submarine cable will be laid to Fuegos, and from there to Santiago de Cuba. From this important place a cable will be laid to Morant Point, in Jamaica; from Morant Point two cables will be laid—one, the longest section of all, to Aspinwall, in Panama, the second will be to Porto Rico; from Porto Rico the cable will be laid to the South American coast, touching at the principal islands. The following list gives the different sections:

Batabano to Fuegos.
Fuegos to Santiago de Cuba.
Santiago to Morant Bay (Jamaica).
Morant Bay to Aspinwall (Panama).
Morant Bay to Porto Rico.
Porto Rico to St. Thomas.
St. Thomas to St. Croix.
St. Croix to St. Christopher.
St. Christopher to Antigua.
Antigua to Guadalupe.
Guadalupe to Dominico.
Dominico to Martinique.
Martinique to St. Lucia.
St. Lucia to St. Vincent.
St. Vincent to Barbadoes.
St. Vincent to Grenada.
Grenada to Trinidad.
Trinidad to Nassau.

A small fleet of vessels has been engaged to carry out the work, and when we consider the length of the cable, and the enormous amount of shore ends, entailing so much labor in a most unenviable climate, its success will reflect the greatest possible credit upon Sir Charles Bright, who, as engineer to the two companies, organized the whole proceedings.

The entire amount of cable required for the work is 3,153 nautical miles; this is divided into—

Deep sea.....2,955 nautical miles.
Intermediate..... 130 " "
Shore ends..... 68 " "

Total..... 3,153 " "

The deep sea cable consists of two types—one for a depth of 500 fathoms, the other for greater depths.

The core consists of a conductor of seven strands of copper, weighing 107 lbs. per nautical mile, and insulated

with three coatings of gutta-percha, alternating with three coatings of compound, to the weight of 167 lbs. per nautical mile. The insulated conductor or core gives, therefore, a total weight of 274 lbs. per nautical mile. The contract specifies that the insulation should be 200 megohms per knot, and that the conductivity of the copper should not be less than 93 per cent. of pure copper. The manufactured cable gives the following results:

Conductor, 95 per cent. pure copper.
Insulation, 350 megohms.

In both cases being greatly superior to the quantities specified.

The core for the whole cable is precisely the same, and is served throughout with tanned jute, the serving varying in thickness according to the required type of cable.

The following is a description of the types of cable: Deep sea, for depths exceeding 500 fathoms: the served core is sheathed with 16 No. 13 homogeneous iron wires, then protected externally with two servings of jute yarn, and two coatings of Clarke's bituminous compound; its weight is 33 cwt. per knot.

Deep sea, for depths less than 500 fathoms: the core is sheathed with 12 No. 9 best best galvanized iron wires, and protected with two servings of jute and two coatings of compound, weighing altogether 2½ tons per knot.

Intermediate cable: this is sheathed with 12 No. 5 galvanized best best iron wires, and with two servings of jute and compound, weighing about 5 tons per knot.

Shore ends: these consist of the intermediate cable, having a second sheathing of 14 No. 1 galvanized iron wires, with two servings of jute and compound, weighing altogether about 15 tons, and forming a very massive cable.

Of the total amount of cable required, up to the present time, nearly the whole has been manufactured and a very large amount shipped. The entire amount of cable will, it is expected, be completed in a few days, and shortly after the whole of it will have left the contractor's works at Silvertown for the West Indies.

The following are the shipping arrangements:

	Knots.
"Melicete".....	381
"Bonaventure".....	637
"Suffolk" S. S.....	101
"Dacia" S. S.....	988
"Ben Ledi".....	1,046
"Titian" S. S.....	3,153

The above fleet consists of three sailing and three steam ships. The "Melicete," "Bonaventure" and "Suffolk" have already left, the "Dacia" is on the point of leaving, and the two remaining vessels will shortly follow. The "Suffolk" has been purchased as the repairing ship to the station, and has gone to New York to take in some cable machinery belonging to the International Ocean Telegraph Company—owners of the Havana, Key West and Florida cables—who also share the cost and expenses of the repairing ship. The "Dacia" has been regularly fitted up as the ship from which all the work will be done, the other vessels being engaged simply as carriers. Her machinery is of the most massive and strongest form possible to conceive, and has been manufactured and fitted by the well known engineers, Messrs. Easton and Amos. The picking-up machinery is very strong, and probably heavier than that used on board the "Great Eastern" for the Atlantic cables. The drum is overhanging, driven by internal gearing. There are some novel points to which we trust to call attention in a future number.

The land lines consist of about 350 miles, the principal portion of which is in Jamaica and Cuba, short lengths only being required for the majority of the islands. An experienced staff and stores were sent out some months

ago, and it is confidently expected that the lines will be in proper working order by the time the cables are submerged.

The electrical arrangements are the same as usual in submarine cables, the testing during manufacture being looked after a little more than is now customary—a staff being engaged at the works night as well as day. The whole of these have been under Mr. France, who has, under Sir Charles Bright, superintended the manufacture and shipping of the cables. Mr. France will shortly proceed out with the staff in the "Dacia" and will join Sir Charles Bright, who is already in the West Indies. On the arrival of the "Dacia" the cable operations will at once commence.

The whole of the cable, including the insulated core, has been manufactured at the works of the India-rubber, Gutta-percha and Telegraph Works Company, at Silvertown, and the excellence of its manufacture reflects the greatest credit upon those engaged. We shall on a future occasion resume an account of the work, when details of its submersion come to hand.

Electrical Phenomena and Theories.

On Thursday, April 28th, Dr. John Tyndall, F. R. S., delivered at the Royal Institution, London, the first of a course of seven lectures on "Electrical Phenomena and Theories."

This opening lecture was necessarily of an elementary character, but the nature of the action of the metals and acids upon each other, in the cells of the galvanic battery, was illustrated by elegant experiments, in which the electric lantern was frequently called in to aid in magnifying the phenomena, thereby making them visible to the whole audience. Towards the close of the lecture one very curious experiment was shown, in which some magnetic oxide of iron was held in suspension by water, enclosed in a short tube of large dimensions, and closed at each end by a flat piece of glass. Thus, when the beam of light from the electric lamp was passed through the tube, the muddy yellow liquid caused the emergent beam to assume a yellow color. Round the outside of the tube was an electro-magnetic helix of insulated copper wire, and every time the current from a Grove battery was sent through this helix the particles of yellow oxide in the water arranged themselves with their longest diameters parallel to the axis of the tube, consequently they let more light pass between them than when many of them had their longest diameters at right angles to the axis of the tube. It followed, therefore, that every time a current was sent through the helix more light passed through the tube, and a flashing effect, not of any very great intensity, was the result. When iron filings are scattered on a long strip of glass, and introduced into an electro-magnetic helix, while the current is passing, they also arrange themselves in lines with their longest diameters for the most part parallel to the axis of the helix, from the same cause which produced the same phenomena with the oxide of iron. A bar of iron being built up of particles, large and small, it follows that when it is transformed into a magnet it has a tendency to lengthen itself. That such lengthening actually takes place was first proved by Mr. Joule, of Manchester, who saw the elongation by means of multiplying apparatus, having an index, which was examined by a microscope. Professor Tyndall placed one end of a bar of soft iron vertically upon the top of a block of stone. The upper end of the bar pressed against the short end of a lever, and the other end of the lever gave a motion of rotation to a little axis, on which axis a small rotating mirror was fixed. Consequently, when the bar of iron was made into an electro-magnet, the slight lengthening it underwent was considerably multiplied in the transference of the motion to the mirror. A thread of light from the electric lamp fell upon the mirror, and

was reflected from its surface to the distant wall of the theatre of the Royal Institution, where it formed a spot of light. Under these circumstances a very slight motion of the mirror resulted in a considerable motion of the spot of light. By means of this apparatus the elongation of the bar of iron by magnetism was multiplied so as to produce a motion of about a foot of the spot of light upon the screen. This was the first time that such phenomena had been made visible to a large audience. In another experiment the lecturer managed to project an image of the lines of magnetic force upon the screen. To do this a parallel beam of light from the electric lamp was reflected vertically upwards, by means of a mirror placed at an angle of 45 deg., and then made to pass through a horizontal plate of glass, on which were two little bar magnets. Another mirror, at an angle of 45 deg., then reflected the light in a horizontal direction, and by means of an interposed lens, about 5 in. in diameter, an image of the two horizontal bar magnets was projected upon the vertical surface of the screen. Iron filings were then dusted over the magnets, and were seen upon the screen arranging themselves in the lines of magnetic force.—*Mechanics Magazine.*

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our Correspondents. Our columns are open to free discussions on all Telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

The Morse Testimonial.—Illiberality and Injustice of its Managers.

WASHINGTON, D. C., May 23.

TO THE EDITOR OF THE TELEGRAPHER.

THE concession so airily made by the Editor of the *Journal of the Telegraph* to the demand that the Morse testimonial should be national instead of confined to the Western Union employes, does not cause the affair to be regarded as favorably as though it had been made a national affair from the first. If it is even at this late day designed to be made a national affair, why should the members of the Executive Committee be selected solely from the Western Union lines? If it is to be national, certainly the large number of telegraphers not employed by the Western Union Company, whose cooperation and subscriptions are invited, should be allowed a representation on that committee, and some voice in the disposition of the funds contributed. The circular of the chairman states that "this circular is designed to reach every one in the employ of the Western Union Telegraph Company," &c. This does not look like a national affair.

But who is the lion of this affair? Not the originator of the idea, by any means. The high officials of the Western Union Company at once saw that they could use the idea of a Pennsylvania operator, scarcely known at all before, to lionize themselves, and have availed themselves of his idea, and let it go out to the public under the impression that the project originated in the minds of those now at its head. Is not the originator of this project entitled at least to the honor of being president, instead of being assigned to a subordinate position? If he has brains enough to conceive such an idea has he not brains enough to be president of the Testimonial Committee? Oh, no! practically say the high officials, that would take the highest honor from us, which we cannot allow.

I do not desire to oppose a testimonial to Prof. Morse, but I do oppose a project conducted exclusively by Western Union officials, yet claiming to be a national affair, calling on those outside of this company to contribute, without allowing such contributors representation on the Executive Committee. If this testimonial is truly designed to be national, why has not the organ of the operators, not only of the other companies but of the Western Union Company, been invited to cooperate? Why is the Editor of the *Journal*, alone made the custodian of the funds collected, and the practical director and manager of the whole affair? While it is not designed to impugn Mr. Reid's reliability or honesty, it would certainly popularize and strengthen the testimonial with the operators if their representative, the Editor of THE TELEGRAPHER, was joined with him in this matter. But no, the Editor of the *Journal* shoulders all the responsibility, which is enough to prove the drift of the whole scheme. Let Mr. Reid and his official associates monopolize the expense as well as what glory there may be in the affair.

In connection with this matter, it is eminently proper that the fact should be recollected that Prof. Morse has already received great honors. Why not, then, give honor to whom honor is due? For one I would be in favor of giving a testimonial to the man who conceived the idea of the telegraph, Prof. Joseph Henry. Prof. Henry invented the telegraph and Prof. Morse put it into practical operation, and is now looked upon as the inventor, and

is to be lionized for that which virtually belongs to another man. This fact may not be generally known but it is nevertheless true, and the evidence adduced on the trial between Prof. Henry and Prof. Morse will substantiate my assertions. PERDU.

Quiet Times in California.—Where are the "Yontz Monument Funds?"

SAN FRANCISCO, May 3d.

TO THE EDITOR OF THE TELEGRAPHER.

NOTHING of special interest has transpired since my last. Telegraph matters just at present are at a stand still.

Messrs. Gamble and Mumford returned a few days since from a trip to San Diego. Their object was the extension of the Southern line from Los Angeles to San Diego, a distance of nearly 100 miles. As the latter place will probably be the starting point of the Southern Pacific Railroad Company, it promises to become a place of importance. I understand that work will soon be commenced for the construction of the extension.

The arrangement has finally been settled between the Central Pacific Railroad Company and the Atlantic and Pacific Company for the use of their lines. This makes the connection complete between the two oceans, and it is said that within one month everything will be prepared for business. Now we can look for cheap telegraphing. I understand F. L. Vandenberg will be Superintendent of the Pacific Division—a good selection. Mr. Vandenberg's long experience and popularity on this coast will enable him to fill the position with great credit.

Shortly after the death of W. R. Yontz a subscription was started for the purpose of fixing up the cemetery lot owned by the Telegraphers' Union in this city, in which the body of Yontz was placed. The many good deeds performed by Yontz during his connection with the company remained fresh in the memories of his associates, and the coast responded quite liberally to the "Yontz Monument Fund." It is said some six hundred dollars was received by Messrs. Ladd and Jaynes, but nothing has been said or done about the matter. What has become of the money? is the inquiry of many. I have no doubt of the sincerity of the gentlemen, but there are many who would like to know what has become of the object. Had the money been placed in the hands of certain other "officials" it would be an easy matter to understand. Let us hear from you, gentlemen, and keep unstained the good names you have always borne.

What has become of your worthy correspondents, "Bear Valley" and "Grass Valley"? Have they had a war of extermination? Their little "spats" were read with much interest. Wake up, gentlemen; let's hear from you again.

I am surprised that so little interest is manifested by the operators on this coast towards THE TELEGRAPHER. Though many subscribe few contribute to its columns. As yet nothing has been said by the "officials" prohibiting the paper's circulation. They, no doubt, feel that they have done enough; for there are many whom I think would not submit to such an outrage—some, perhaps, who did not strike—for their professions are such.

Julie J. Guthridge has resigned his position with the Central Pacific Railroad at Sacramento, and is now on his way East. Julie is a good boy and a first class operator. Julie, tell us how Gamble swindled you out of your salary at Virginia. Ixion.

A Chief Operator Chained and Caned.

MEMPHIS, TENN., May 11th.

TO THE EDITOR OF THE TELEGRAPHER.

AN affair took place at the Western Union office, Thursday evening, the 6th inst., in which Mr. W. E. Spinner, the chief operator, was completely surprised, chained and caned effectually. These summary proceedings were caused by the sudden resignation of Mr. Spinner, and his announced immediate departure for California, whither he goes in the employment of the same company. He was decoyed into the office where the boys had congregated by Mr. Starnes, on behalf of those interested in the affair, and presented with a superb gold watch chain. In presenting the chain Mr. Starnes said:

"Friend Spinner—The operators of this office, who have been so long working under your directions, are unwilling that you should leave them without carrying with you some little testimonial of their esteem for you, and with this feeling they have requested me, in their behalf, to present you this chain, into which they have linked their strongest and best wishes for you. I am not informed that any sentiment was indulged in in the selection of the gift, but perhaps it may have an interpretation, for sentiment is a very pretty thing in its way. The language of a chain might be 'strong union, even at a distance,' and in this case a stronger union than that

which the mysterious electric fluid always establishes between distant friends in our profession. If we indulge fancy still further, we might understand a watch chain to express a desire on our part that your future time, your future hours, your future associations may not be wholly cast loose from those which in the past year have so long been forming here, in the old Memphis office, with the old Memphis boys. Perhaps in the future the associations you are now breaking up may often rise up before you with a charm and richness which, while they were forming, they did not seem to have. The future often deals so with the past. If so, will not your own thoughts and feelings duplicate our gift, and present you with a golden chain, which will bind your future hours to us.

"At first thought it seemed hardly right to me that one who has so recently become acquainted with you should attempt to speak in behalf of much older friends; but, on second thought, it seemed just appropriate, because such an one can heartily assure you that it does not require an acquaintance of years with you to feel, as keenly as your oldest friends, the loss we sustain in your departure from us.

"If I were to express to you the regrets which have found words among us since your sudden resignation, I should be guilty of language more appropriate to an obituary than to an occasion like this, when I speak to you face to face; but if you would allow me a humorous illustration of feelings which are no matter of humor with us, I should say that your sudden leaving comes upon us 'like pulling teeth,' not only in the pain but in this, that we had not realized how large a place you filled among us until we first felt the vacant space made by your 'taking out.' I was thinking to-day that there was a kind of appropriateness in the proposed changes in the Memphis office, which are so soon to follow upon your departure, by which the old place takes a new starting point, 'sticks a new stake,' begins to build up new associations, from the time one so long connected with it, and so very highly esteemed in all his relations with it, goes so far away from from it, probably forever.

"Accept this chain, then, as a substantial testimonial of our esteem for you, and our appreciation of you, and also this letter, in which we have endeavored to express the same sentiments verbally."

Mr. Spinner, taken completely unawares, and deeply affected, attempted a reply, but was checked by Mr. Pepper, the manager, who, stepping forward, intimated that he had yet a little business with him, and presented Mr. S. with an elegant gold mounted cane, suitably inscribed, as a mark of his personal esteem and friendship; after which the meeting broke up, probably for the purpose of placing "more fluid on the line," but, unhappily, not being of the party, I could not state positively.

A better electrician, a more competent and popular officer, or a more gentlemanly, genial companion, would be hard to find, and the void caused by his departure will, indeed, be difficult to fill, and long felt by numerous friends of this office.

Mr. D. O. Dyer, formerly night chief, takes the position of chief operator, vice Spinner, and Mr. J. J. Fowler night chief, vice Dyer, promoted.

Mr. Ed. Schermerhorn takes his accustomed two weeks' Saratoga tour on the 15th; returns the 1st proximo.

In the P. and A. office George Otis has resigned, and goes rustivating in the vicinity of "Buzzard's Bay," and is succeeded by Charlie Barnes, of the same company. Cincinnati office. Owl.

Good for Evil—A True Christian.

CHICAGO, ILL., May 19th.

TO THE EDITOR OF THE TELEGRAPHER.

THE defence of the Western Union officials here by Mr. Crittenton has excited a good deal of attention and comment. The claim that General Stager or any other telegraph official is entitled to exemption from criticism of his conduct, on account of any real or supposed services in connection with the late administration of President Lincoln, is absurd. He and they must be judged in their present official positions by their acts, and if these are characterized by meanness, oppression, and malignancy towards their subordinates, it is not only proper, but a duty that the fact should be made known through the columns of the only organ we have. J. Newton Crittenton we know to be a good fellow, and a conscientious Christian. The sincerity of his religious professions and of his Christianity is manifested by the fact that, notwithstanding he has suffered personal injustice at their hands, he is ready to defend these same officials against the adverse statements of his brother telegraphers. The spirit of forgiveness is always commendable, and it is truly gratifying to find one person, at least, who is not only willing but eager to defend those who have certainly shown themselves not particularly friendly to him.

If Messrs. Stager and Wilson will pursue a kind and conciliatory course toward us, and endeavor to make our

situations pleasant and satisfactory, instead of, as they now do, forcing us to labor more hours, for less pay, than at other principal offices of the company, we would gladly recognize this as the manifestation of a desire and intention on their part to treat us justly. In that case no one will be more prompt to give them credit therefor than your correspondent.

OPERATOR.

Congress and the Telegraph.

WASHINGTON, D. C., May 25th.

TO THE EDITOR OF THE TELEGRAPHER.

BOTH Houses of Congress have been too busy with other matters to give any attention to telegraph affairs since my last week's communication was written. As Congress has decided to adjourn on the 15th of July next, it is doubtful whether final action on any telegraph scheme will be obtained. The Postal Telegraph goes over, as a matter of course, both as regards Mr. Washburne's bill and Mr. Hubbard's scheme.

In the House, this afternoon, Mr. Washburne, from the Select Committee on the Telegraph, offered to waive the right of that committee to be called as next on the list, provided unanimous consent were given that the committee may report at any time, with the understanding that action would not be asked at the present session. This suggestion was agreed to, and so the Postal Telegraph matter goes over for the present session. Mr. Washburne will make his report at some time before the adjournment, in order that it may be printed, but no further action will be had in the matter.

On Tuesday last the Foreign Relations Committee of the Senate gave a hearing to Messrs. Cyrus W. Field, Hubbard, and W. Chase Barney, upon the Pacific Submarine Cable, the Postal Telegraph, and the Holland Cable, respectively. Nothing new or of special interest was developed at this meeting.

CAPITOL.

Query.

TO THE EDITOR OF THE TELEGRAPHER.

Is it possible for an operator employed by the Western Union Telegraph Company to be *truly religious*? Your Chicago correspondent, in defence of the W. U. officials, advises operators, "above all, to attend upon the consolations of true religion." It must be very *consoling* to the pious operator to desecrate the sacred hours of the Sabbath, as required by the rules and regulations put forth by those Christian and gentlemanly officials of the great monopoly. How does J. N. C. like it? or doesn't he practice what he preaches?

CHRISTIAN.

PERSONALS.

Mr. L. D'AKERS, one of the strikers from No. 145 Broadway, has accepted an appointment in the Albany, N. Y., office of the Atlantic and Pacific Telegraph Company.

Mr. WM. WALLACE, Jr., formerly of Buffalo, N. Y., is filling a situation in the B. & B. Telegraph office, at No. 16 Broad street.

Mr. JULES GUTHRIDGE, formerly of San Francisco, is working for the Union Pacific Railroad, at North Platte, Nebraska.

Mr. J. W. BREWSTER, formerly of the New York Central Railroad, has accepted the position of night operator at Walton, Kentucky, on the Short Line Railroad.

Mr. GEORGE OTIS, late of the Pacific and Atlantic office, Memphis, is at home rusticating, for awhile.

M. CHARLES BARNES, of the Pacific and Atlantic Cincinnati, Ohio, office, takes Mr. Otis's place.

Mr. W. C. HUMSTONE, a striker, formerly in the Brooklyn, N. Y., Western Union office, has been appointed manager of the Atlantic and Pacific Company's office, at No. 11 Broad street, New York.

Mr. CHARLES H. SAWYER has been appointed chief operator of the same office.

Mr. D. E. RAND, a striker, formerly with the Western Union Company, at Boston, Mass., and more recently with the A. & P. Co. at Oroville, N. Y., has been appointed night manager of the A. & P. Company's office in this city.

Mr. W. K. STARRS, formerly with the Western Union Company at Portland, Me., succeeds Mr. RAND at Oroville, N. Y.

Miss ELMIRA CONNELL takes charge of the Montreal Telegraph Company's office at St. Charles (Richelieu), Province of Quebec, *vice* Beique, resigned.

Mr. A. VENTON has been transferred from the Buffalo office Montreal company's line, and takes charge of the Clifton House (Niagara) office, same company.

Mr. J. DOUGLAS, of Evans Mills, N. Y., has accepted a position in the Buffalo office of the Montreal company.

Mr. DUDLEY, formerly of the Buffalo office, has gone home to New Market, Ontario.

Mr. J. W. BOOTH has been transferred from the night office at Terrace Station to the day office at Toano Station, of the Central Pacific R. R.

THE TELEGRAPH.

(By Cable.)

THE WEST INDIA AND PANAMA TELEGRAPH CABLE.

KINGSTON, May 10th, via HAVANA, May 22d.—The ship *Milicete* arrived here on the 29th ult., with a section of the West India and Panama Telegraph Cable, and on the 3d inst. the United States steamer *Yantic* brought Sir Charles Bright, the director of the enterprise. The steamers *Suffolk*, *Dacia*, *Titian* and *Ben Ledi*, with the remainder of the cable, are daily expected here. Several English telegraph operators came by the *Milicete*. It is anticipated that the cable will be laid by the end of June. Hayti has applied to be brought into telegraphic communication.

PROGRESS OF THE WEST INDIA TELEGRAPH CABLE.

HAVANA, May 22d.—The work of constructing the land lines of the West India Telegraph in the island was going on without interruption.

Sir Charles Bright visited St. Thomas on the 16th inst., to make arrangements for landing the telegraph cable.

LONDON, May 25.—It is said that a powerful faction is intriguing at Amsterdam to defeat the arrangements of the English Atlantic Cable.

FOREIGN TELEGRAPHIC NOTES.

THE ordinary general meeting of the Great Eastern Steamship Company was held on Monday, April 25th, at the London Tavern, Sir D. Gooch, M. P., in the chair. The report congratulated the shareholders on the successful completion of both charters, under which the ship was employed at the date of the last annual meeting. The Chairman, in moving the adoption of the report, said, the Great Eastern left Aden on the 7th inst., and might be expected in this country by the first week in June, when she would enter upon her agreement with the Telegraph Construction Company. The new agreement entered into with the Telegraph Construction Company would yield a dividend of 20 per cent. for the next five years.

Mr. Robert Sabine's work on the electric telegraph has been translated in Holland.

The Telegraph Construction Company have chartered the Great Eastern for five years, at a payment of £20,000 per annum.

The directors of the Telegraph to India Company (Limited) state, in their report, that as the British Indian line from Suez to Bombay has been successfully completed, the arrangement of the 2d of January, 1869, will at once be carried out, and the shareholders will receive £37,500 in fully paid shares of the British Indian Company, with the four months' interest upon the lease of the line to the 30th of April. The necessary resolutions for winding up will be submitted to an extraordinary general meeting on the 9th inst.

At a general meeting of the shareholders in the British Australian Telegraph Company, held on Monday, the report, which was adopted, stated that satisfactory terms had been agreed upon between the Netherlands Government and the company for permission to land the cables on the island of Java, and for the transmission of messages over the Government telegraphic system in that island. By this arrangement the contingency of having to construct an entirely submarine communication between Singapore and Australia will be avoided. The order for the cable has been given to the Telegraphic Construction and Maintenance Company, and the sum of £60,000 has been paid to them in accordance with the contract. The shares had all been allotted, and the allotments paid up.

Brooks' Paraffine Insulator.

THE *Railroad Record*, in speaking of the Brooks Improved Paraffine Insulator, says:

"The insulators most in use by the telegraph companies of this country are the common glass. Twenty years since this style of insulator was generally used in Europe, but porcelain was substituted to so great an advantage that in five years—say fifteen years ago—there was scarcely a glass insulator in use, and European telegraphers now look upon the era of glass insulators as among the dark ages of the telegraph. Porcelain, though inferior to the Brooks, is vastly superior to glass. The

only reason why glass has been so much used by telegraph companies is on account of its cheapness, or rather less first cost.

"If telegraph companies had been organized for the simple purpose of doing a legitimate telegraph business, glass insulators would not at this day be used; but a different object was in view, and that object—speculation. The money subscribed to build lines went into the pockets of the originators of these schemes, except a very small portion, and this portion was expended for the cheapest of material. If the money subscribed had been honestly applied, telegraph stocks would have proved a better investment.

"The Western Union Telegraph lines were an aggregate of these flimsy and ephemeral structures, but they are now being rebuilt in a very substantial manner, and this improved insulator used with great success.

"The same can be said of the railroad companies using the insulator. Their wires are put up for the purpose of telegraphing, and not as a speculation."

Another Telegrapher turned Editor.

MR. H. W. PHELPS, of Huntingdon, Tenn., an experienced telegrapher, has retired from the business and purchased an interest in the *Huntingdon Courier*. In his salutatory Mr. PHELPS says:

"It is not without a little sigh of regret that we bid adieu to our brother telegraphers, and return to our old-time occupation. A disciple of Faust, we were years ago lured into the telegraphic ranks, which now, prostituted by monopolies and the mania for a cheap and inefficient labor, by railroad and telegraph corporations, has forced us, like many others, to relinquish the 'click of the key' for the 'click of the type.'"

New Patents.

For the week ending May 17, and each bearing that date.

No. 103,127.—APPARATUS FOR LIGHTING GAS BY ELECTRICITY. William W. Batchelder, Boston, Mass., assignor to George Viles, same place.

Claim.—The arrangement and combination of the insulator R and the connecting spindle d with the electrical generator, constructed substantially as described.

Also, the arrangement and combination of the insulator R and the metallic connecting spindle d with the electrical generator, the broken circuit O M, the main insulator E, the gas-cock X, and gas burner H.

Also, the arrangement and combination of the electrical generator, the insulator E, the broken circuit O M, the gas cock X, the gas burner H, the handle I, and the bracket to support the handle, under circumstances as specified.

Also, the arrangement, as described, of the insulator E with the broken circuit conductor O, the electrical generator, the gas cock and burner—the same causing the said insulator to perform the two functions, as hereinbefore set forth.

No. 103,228.—ELECTRO-MAGNETIC ENGINE. Henry M. Paine, Newark, N. J., assignor to himself and M. S. Frost, New York City.

Claim.—1. The combination of the sector magnet A and sector-limbed armature F, with their adjustments or without.

2. The breaking of the circuit previos to the coincidence of the axis of magnet and armature, substantially in the manner and for the purpose specified.

No. 103,229.—MAGNETIC ENGINE. Henry M. Paine, Newark, N. J., assignor to himself and M. S. Frost, New York City.

Claim.—1. The arrangement of the magnets on the shaft.

2. The breast of fulcrum magnets in their combination with the rotating magnets A, all substantially in the manner and for the purpose specified.

No. 103,230.—ELECTRO-MAGNET. Henry Monroe Paine, Newark, N. J., assignor to himself and M. S. Frost, New York City.

Claim.—The compounding or binding together of bars, separately wound, and in the same direction, substantially in the manner and for the purpose hereinbefore set forth.

No. 103,231.—CONSTRUCTION OF ELECTRO-MAGNET. Henry M. Paine, Newark, N. J., assignor for one half to Mahlon S. Frost, New York City.

Claim.—The interposition of metal sheets between the layers of electro-magnetic coils or the clothing of the whole wire with the same, substantially as herein set forth.

For the week ending May 24, and each bearing that date.

No. 103,440.—ELECTRO-MAGNET. Mahlon S. Frost, New York.

Claim.—An electro-magnet, the legs of which are of conical, pyramidal, or other form, tapering in all directions from the poles, substantially as specified.

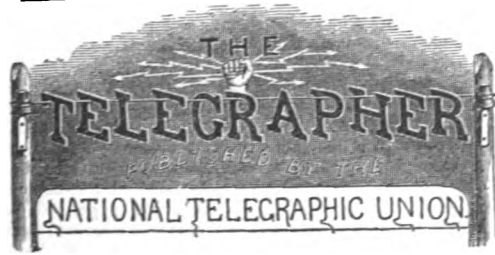
No. 103,496.—PRINTING TELEGRAPH INSTRUMENTS. William P. Phelps, Brooklyn, N. Y., and William J. Phillips, Philadelphia, Pa., assignors to William J. Phillips.

Claim.—1. The vibrating bar A, in combination with the suspended points C and D, substantially as set forth, for the purpose specified.

2. The combination of the bar L, stop P, rod Q, ratchet wheel I, ratchet J, and spring K, substantially as set forth, for breaking the local or printing circuit, after the printing of each letter, and keeping said circuit broken until it is closed again by the starting of the type wheel.

BORN.

CLARK.—May 19th, to A. E. CLARK, Albany, N. Y., a daughter.



SATURDAY, MAY 28, 1870.

J. M. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.

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TELEGRAPHIC EDUCATION AND PROFICIENCY.

IN our issue for the 14th inst. we briefly discussed and set forth the necessity which exists for an elevation of the standard of telegraphic education, and proficiency of telegraph operators. We had hoped that the request that our professional brethren would communicate through these columns their views on this most important subject, and the best means for securing such improvement, would attract their attention and meet with a general response. In this we have thus far been disappointed. This, we hope, arises not so much from want of appreciation of its importance as from the disposition on the part of our correspondents to wait until others have manifested their views.

We can assure all those who have the permanent welfare of the profession at heart, that in the future there is no subject of more importance in connection with it than this. Knowledge in telegraphing, as in every other profession, is not only power but profit. Heretofore there has been no established standard of qualification or classification of telegraph operators. Each Superintendent and Manager has some undefined and indefinite idea of what constitutes a first class operator, and makes his appointments and regulates his salaries accordingly. It is a shame that this state of things should continue, and time that a radical reform should be effected. That this reform may be established, the earnest coöperation of both telegraph employers and employes is indispensable. We do not propose at this time to go fully into this subject, but only desire to once more call the attention of those so deeply interested to it, and to renew our invitation to them to communicate their views thereon through our columns. We know of no more useful purpose that can be served through THE TELEGRAPHER than this.

The practical telegraphers of this country have successfully established, and for nearly six years maintained an organ through which their rights could be sustained and mutual improvement secured. It is not too much to claim that this paper has steadily improved, and that its existence has been of incalculable benefit to telegraphic employes. We desire in the future to make it more useful and beneficial even than ever before. To do this we require not only the material support of the telegraphers, but also their coöperation in its management and contributions to its columns. While in the future, as in the past, tyranny and oppression will be mercilessly exposed and denounced, whoever may be the offenders, and the rights and privileges of telegraphic employes vigorously and forcibly maintained, we shall seek more than ever to instruct and elevate the thousands who are dependent upon the telegraph for support. In the latter, as in the former, we ask the aid and coöperation of all intelligent telegraphers, whatever may be the position they occupy in the great telegraph system of this country and the world.

Communicate through the columns of your organ your views on this leading subject of the advancement of the standard of telegraphic education and proficiency. Give to each other the benefit of your experience in the management of wires, batteries, circuits, &c. When anything of an apparently unusual character occurs in connection with the working of the wires and instruments, carefully note the facts and make them known to your fellow operators. Any peculiarities in crosses, earth circuits, and the phenomena developed by auroral manifestations or atmospheric electricity upon the wires or instruments should also be communicated. If difficulties and perplexities arise seek advice and counsel through the columns of your paper, and thus obtain valuable instruction not only for yourselves but for others who may experience similar perplexities. Record, also, your experience and observation with regard to different kinds of insulation, &c. In fact, we might go on and instance many matters of interest on which an interchange of views and experience would be valuable and instructive, but the above will suffice for the present.

Thus we may, week by week, accumulate a fund of information and statistics which will prove not only of constant service and value in your business but of great advantage to scientific observers. The telegrapher who thus adds to the general stock of information, and aids thereby in the solution of the many intricate problems which are constantly arising in connection with electricity and telegraphy, has not lived and labored merely for the passing moment.

We do not propose at this time to give our views as to how the advancement of the standard of telegraphic proficiency and a proper classification, of telegraphic laborers may be accomplished, any further than has been indicated in this and our previous article on the subject. We have very decided views and opinions thereon, but prefer that our correspondents should give to our readers the benefit of their experience and observation, without reference to our own convictions. And further, if those most directly concerned do not regard it as a matter of sufficient importance to interest them practically, it would be of little use for us to pursue it further. We shall wait with hopeful interest the response to this appeal.

A New and Useful Invention.

THE LÉCLANCHE battery, which has been introduced to a considerable extent in this country for certain purposes, has been found almost useless for circuits of low resistance, where a constant current is required, on account of its rapid polarization, which causes it to lose its strength in a short time on a closed circuit, although it soon recovers if allowed to remain disconnected.

Mr. GEORGE LITTLE has shown us an invention for overcoming this obstacle in the use of the LÉCLANCHE battery, which he calls a direct acting Rheotome. Two sets of batteries are employed, and the Rheotome automatically shifts the circuit alternately from one battery to the other, at short intervals, by which means one battery becomes depolarized, and regains its normal strength while the other is in use, and *vice versa*.

In other respects than the one above mentioned the LÉCLANCHE battery is a most superior one, and we are pleased to see that an effectual means has been discovered of obviating the principal objection to its use.

Galvanized Telegraph Wires.

THE attention of telegraph contractors and managers is called to the advertisement in this paper of Messrs. L. G. TILLOTSON & Co., of No. 8 Dey street. This firm are the sole agents in this country for the superior galvanized telegraph wires manufactured by RICHARD JOHNSON & NEPHEW, of Manchester, England; also, of the American Compound Telegraph Wire Company, of this city, and of BROOKS' improved paraffine insulators. With such wires and insulators as are furnished by TILLOTSON & Co. there can be no excuse for the construction of inferior telegraph lines.

Unpleasant Reports.

WE would advise Mr. ED. SMITH, formerly of Omaha, Nebraska, but now, we understand, located at Dubuque, Iowa, to communicate at once with this office, to avoid more particular mention of some unpleasant reports we have received in reference to his operations.

Improvements in Electro-Magnets.—The "Sector" Magnet.

WE are informed, on excellent authority, of some very important improvements lately made in this country in electro-magnets, which promise to form a very important step toward the successful application of electricity as a motive power. A magnet weighing but fifty pounds is said to have lifted one hundred and six pounds, at a distance from its poles of one and three quarter inches, the battery used consisting of nine eight inch Bunsen cells. A comparative estimate of the power of this magnet may be realized when it is stated that the great electro-magnet at the college of New York, weighing six hundred pounds, when subject to the action of a Bunsen battery of three hundred twelve inch cells, lifts seventy pounds a distance of one and a half inches. Taking into consideration the difference in battery and distance of attraction of the two magnets—the new magnet—which is termed by its inventor the "sector" magnet—shows an enormous gain in power.

One peculiarity of the "sector" magnet is in the flat sector shape of the limbs. In adopting this shape the inventor explains that his first consideration has been to reduce the mass of iron in the limbs to the extreme minimum of molecules consistent with the required polar surface and strength of parts, as every molecule in the mass that is not directly necessary to these conditions is an absorbent of electrical force, and consequently detrimental to the magnet's sensitive or dynamic value. The axes of cylindrical magnets possess no attractive properties, and it is found that their removal by boring out the centre renders the magnet more sensitive, and increases the range of the attractive influence. Now, by cutting open such hollow limbs, and spreading them out in flat plates, a still better result is obtained, inasmuch as both sides of the limb are traversed by the electric current. By cutting the flat plates into sector shapes the limbs are still further relieved of all their useless molecules. The broad section of the sector forms the pole of the magnet, and the longest strides of the magnetizing currents are in the immediate vicinity of the focus of attraction, the most economic value of the battery forces being thus insured.

It is not asserted by the inventor that the limbs of this form, wound with insulated wire in the usual way, have any greater sustaining power than those of cylindrical or straight flat limbs, but the range of their attractive influence is much longer, and the time of its action decreased. The sector shape of the limbs is not, however, the only improvement in the "sector" magnet. In laying up the coils on the limbs of the magnet tin foil is arranged between the successive layers of coils, for the purpose of preventing the retarding action on each other of the parallel currents through the successive coils, which action detracts greatly from the power of the magnet. There are also some other improvements, including a novel system of compounding two or more magnets, whereby their aggregate power is increased. We hope shortly to be in a position to lay before our readers fuller particulars of this invention.—*American Artisan*.

The Anglo-American Telegraph Company.

THE report of the Anglo-American Telegraph Company (Limited) states the total receipts accruing to the company, for the nine months ending January 31, last, including a balance of £3,725, carried over from the last account, to amount to £118,915, while the working expenses were £12,657, leaving £106,258 available for dividend. Out of this three interim dividends of 10s. per share, amounting in the whole to £90,000, have already been distributed, and there remains a balance of £16,258 to deal with. The directors, therefore, now declare a further dividend at the rate of 5s. per share, free of income tax, leaving £1,258 to be carried forward. Since the commencement of the joint purse arrangement with the French Atlantic Company the receipts have been fairly satisfactory, and the expenses naturally consequent upon competition greatly diminished. The Robert Lowe, which has been expressly built as a maintenance ship, at the cost of the two companies, is expected to be ready for sea by the middle of May, when she will at once proceed to Newfoundland to repair the 1866 cable.

A NUMBER of the officers of the Indian army have joined the School of Military Engineering, at Chatham, England, to go through a course of instruction in army signalling and telegraphy.

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A lot of the above BATTERIES just received.

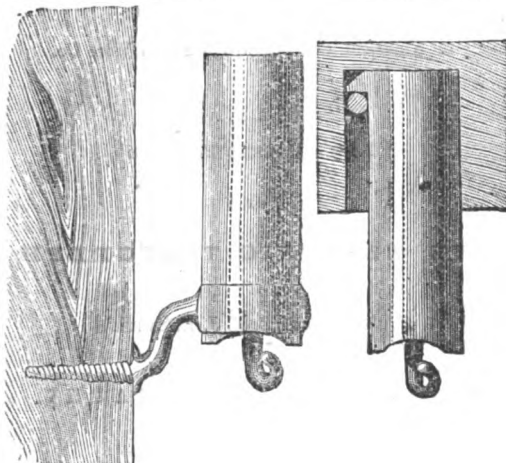
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The improvements introduced in the construction of this Insulator make it, beyond question, the BEST.
Its insulating properties exceed those of the glass a hundred thousand fold.

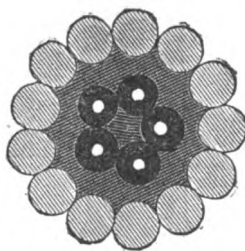
In strength and durability it has no equal.
They are warranted not to break or part.
They are made with a screw shank, to fasten into the pole, price 38 cents each, or without the screw, for cross-arms, 30 cents each.

Pamphlets furnished, with full description.
A stock of the Insulators always on hand at our stores.
THE BROOKS' INSULATOR, with the PATENT COMPOUND WIRE and our PATENT MAGNETS, constitute the best Telegraph Lines ever constructed.

L. G. TILLOTSON & CO.,
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Sole Agents of American Compound Telegraph Wire Company.

Importers of English Galvanized Wire; Manufacturers and Dealers in every description of Telegraph Machinery and Supplies.

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SUBMARINE TELEGRAPH CABLES,

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TELEGRAPH AND ELECTRIC USE, and for

BLASTING AND MINING PURPOSES,

in every variety desired.

As an Insulation for Telegraph Cables and Electric Conductors GUTTA-PERCHA has been universally adopted by all scientific and practical Electricians and Manufacturers of Telegraph Cables and Wires in this country and Europe, and has sustained, with increasing confidence in its superiority, the practical test of over twenty years' general use.

The PROPRIETOR would say, to all parties desiring

SUBMARINE TELEGRAPH CABLES,

that he will guarantee to make and deliver at his Factory any style of Cable, Insulated with Gutta-Percha, as low as they can import Cable of the same style and quality.

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Messrs. L. G. TILLOTSON & CO.,
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BLISS, TILLOTSON & CO.,

247 SO. WATER ST. CHICAGO, Ill.,

have been appointed by me GENERAL AGENTS for the sale of any Telegraph Cable or Wire manufactured at the Works in New York, at Factory Prices, delivered in New York.

JOHN THORNLEY, 503 Chestnut St., Philadelphia,

has been appointed Agent for the sale of any and all goods manufactured by me, at Factory Prices, delivered in New York.

SPECIAL AGENTS IN NEW YORK,

for sale of all goods (except Telegraph Articles), are

H. G. NORTON & CO., 26 Park Place,
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OFFICE AT FACTORY.

NEW
SUBMARINE CABLE.

A. G. DAY'S

KERITE,

OR

COMPOUND RUBBER COVERED WIRE

SUBTERRANEAN & AERIAL WIRES,

OF THE

HIGHEST INSULATION.

CHARLES T. & J. N. CHESTER,
No. 104 Centre Street,

EXCLUSIVE AGENTS

offer for sale, as TELEGRAPH and ELECTRIC CONDUCTORS, Wires protected by the BEST INSULATOR and STRONGEST RESISTANT TO CHEMICAL ACTION and ATMOSPHERIC INFLUENCE.

After the experience of several years in the use of KERITE for purposes of insulation, we have concluded to adopt it as the very best substance for wire covering, not only for use of offices but for SUBTERRANEAN, SUBMARINE and AERIAL LINES. We have used it unprotected for years under ground, and exposed to the most injurious atmospheric influences—to heat, cold and moisture—and have yet to learn its failure, when other ordinary insulating substances would have been rapidly destroyed. UNDER WATER it has retained an electrical charge for many hours, thus ranking it in the HIGHEST GRADE of NON-CONDUCTORS.

We have, therefore, made arrangements not only to secure THE EXCLUSIVE AGENCY for its sale, for the purposes for which we have already sold it so largely, but to furnish complete

IRON-CLAD CABLES,

of the usual size, with KERITE COVER, believing that it will exceed, in insulation for submarine purposes, ANYTHING HITHERTO MANUFACTURED.

We shall be happy to furnish estimates for any amount and size of cable, which will be found to compete with any other construction, both in quality and price.

In corroboration of our statements we append extracts from reports of those who have exposed it to the severest practical tests.

From Prof. SILLIMAN, of Yale College, Nov. 10, 1868.

"I am satisfied, as the result of my own researches, that ozone is by far the most fatal of atmospheric influences. I have submitted portions of KERITE to the action of a highly ozonized air for a sufficient length of time to prove them, and at the same time have exposed the best English Gutta-Percha Covered Cable to the same tests, with the following result: After long experience KERITE resists perfectly! The best English Gutta-Percha Cable was speedily destroyed. A few days' exposure to ozone would produce more effect than many years in a normal atmosphere, exposed to carbonic disulphide, nitric acid, sulphuric acid, sulphuric dioxide, nitric peroxide, chlorine gas and alkaline hydrates. Gutta-Percha is immediately dissolved in carbonic disulphide, and powerfully acted upon by alkaline hydrates. Some samples of KERITE resist the action of the former in a surprising manner, and are completely unaffected by the latter."

"NEW YORK, May 14, 1870.

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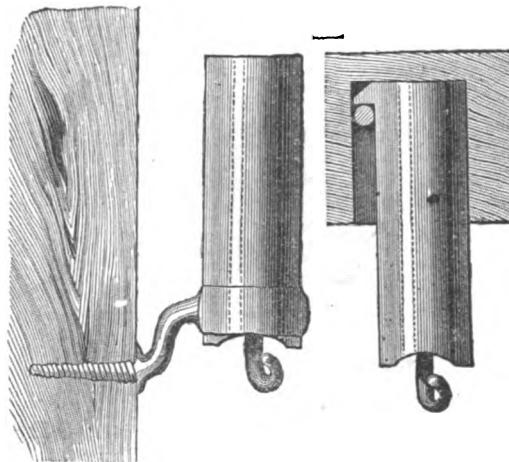
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friends of the paper to use extra efforts to

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This year we would say to our friends, as a stimulus to their
zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA,
that the unscrupulous agents of the great TELEGRAPH MONOPOLY
OF THE WORLD, the Western Union Telegraph Company, annoyed
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It will be seen, therefore, that this movement is one incited
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UNSWERVINGLY FAITHFUL to the interests of the Practical Tele-
graphers of the country, and could not be used for the personal
ends of these disgruntled officials.

It remains to be seen whether the Practical Telegraphers of
this country CAN BE RELIED UPON to stand by those who seek
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at the late Great Fair of the American Institute, New York, and
their superiority is generally acknowledged by operators who
use them.

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magnets, their acknowledged merits consist in the construction
of the helix, which was patented Aug. 15, 1865. This being of
naked copper wire, so wound that the convolutions are separated
from each other by a regular and uniform space of the 1-800th of
an inch, the layers separated by thin paper. In helices of silk
insulated wire, the space occupied by the silk is the 1-160th to
the 1-300th of an inch; therefore a spool made of a given length
and size of naked wire will be smaller and will contain many
more convolutions around the core than one of silk insulated
wire, and will make a proportionably stronger magnet, while the
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Small Box Relays.....	16 00
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Main Sounders, some as the above, with heavy armature levers without local connections, 75 cents less.	
Pocket Relays, with all the adjustments of the above, and good Lever Keys.....	22 00
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THE TELEGRAPHER.

JOURNAL OF ELECTRICAL PROGRESS.

Vol. VI.—No. 41.

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Whole No. 203.

LITERATURE.

The Transatlantic Longitude, as determined by the Coast Survey Expedition of 1866. A Report to the Superintendent of the U. S. Coast Survey. By BENJAMIN AP-THORP GOULD, late Assistant. Washington, D. C.: published by the Smithsonian Institution. New York: D. Appleton & Co., 1869.

We are indebted to the courtesy of the officers of the Smithsonian Institution for a copy of this report, which forms No. 223 of the "Smithsonian Contributions to Knowledge." As some matters which are discussed by Prof. Gould are of great scientific interest to our professional readers, no apology will be required on our part for directing their attention to some portions of the work, which are worthy of especial attention from the students of telegraphic phenomena.

One of the earliest applications of the electric telegraph to other than strictly commercial and social purposes was to the determination of the difference of longitude between widely separated places. Mr. Alfred Vail, in his work on the telegraph, published in 1845, states that Prof. Morse suggested to the distinguished Arago, in 1839, that the electro-magnetic telegraph would be the means of determining longitude with an accuracy hitherto unattainable. The first actual experiment of this kind was made by Capt. Charles Wilkes, on the 12th of June, 1844, between Baltimore and Washington. (See *Capt. Wilkes' letter in Vail's book*, p. 60.) Prof. Gould has, therefore, inadvertently fallen into error in stating that this method was first practiced by the U. S. Coast Survey. The latter, however, soon afterwards took up the subject and carried on an extensive series of experiments, under the direction of Mr. Sears C. Walker, and a report on the subject was made in 1848. From that time until the breaking out of the war, in 1861, they were unremittingly prosecuted, and correct determinations made of the longitudes of all important points between the northeastern boundary and New Orleans.

The completion of the Atlantic cable in 1858 promised to afford an opportunity of connecting the American with the European longitudes, and the late Prof. A. D. Bache took immediate measures for the attainment of this end, but the failure of the cable of 1858, and the breakage of that of 1865 in mid ocean, necessarily frustrated the design. The completion of the cable of 1866 found Mr. G. W. Dean, one of the officers of the Coast Survey, awaiting the result at Heart's Content, N. F., and upon his report that the character of the signals was satisfactory, the scientific corps was at once organized.

Prof. Gould himself took charge of the operations at Valencia, Mr. Dean being assigned to Heart's Content, and Mr. Davidson to Calais, Me., the longitude of the latter place having been determined in 1857. Owing to the defective condition of the land lines between Calais and Heart's Content the observers at these places were unable to get direct communication for nearly three months, although the distance is only about 1,100 miles. At last, on the 11th of December, a sharp frost threw the line into admirable condition, and the exchange of signals was effected without difficulty. The longitude signals between Valencia and Heart's Content were exchanged during the months of October and November with the most satisfactory results, the final determination of the time between Greenwich and Washington being given as 5h. 8m. 12s.39.

The most interesting portion of the report to the professional electrician and telegrapher is that which relates to the transmission of signals through the cables. The receiving instrument employed was the Thomson reflecting galvanometer. Attempts were made to employ an exceedingly delicate relay, with a view of making the signals self-registering, but without success. The cable could not be discharged with sufficient rapidity when the charge was made strong enough to actuate the most

sensitive relay magnet. Prof. Gould also says: "I had previously designed availing myself of an ingenious suggestion of Dr. Gibbs, by which the heat from the lamp should be concentrated and reflected, together with the light, by the mirror galvanometer, being then received on a very delicate thermo-electric pile, which should thus record upon the chronograph the time of the signals. But too little time was available for the purpose, and although Mr. Farmer, whom I had requested to prepare some apparatus based on this principle, made sufficient progress with his experiments to show the practicability of the suggestion, he was obliged to abandon all hopes of constructing any satisfactory instrument in season to be available for our purposes."

In the 12th chapter of the report, which forms a sort of supplement to the regular work of the expedition, Prof. Gould says:

"From the beginning it was part of my design to arrange and make a system of experiments for obtaining general answers, so far as might be possible, to sundry interesting questions to which previous investigations had afforded no satisfactory replies. Among these were—

"1. The character of the agency which gives the telegraphic signal upon the closing or interruption of the galvanic circuit, and the route by which its transmission is effected.

"2. The influence exerted upon the conductor by using the earth as part of the circuit, or by placing the complete circuit in electrical communication with the earth.

"3. The extent to which velocity of the propagation of signals is dependent upon the electro-motive force, and upon the resistance of the conductor.

"4. The equality or difference in speed of the signals from the positive and from the negative electrode, when the other is connected to the earth, as also the relative velocity of signals given by completing and by interrupting the circuit.

"Of course it was not expected that satisfactory information could be obtained, or crucial experiments devised, regarding all these points, but these were the guiding ideas in providing for the additional experiments, which were carried out, with the friendly aid of the gentlemen of the telegraphic staff, on the 1st, 10th and 16th of November."

The electrical tests of the cables, made by Latimer Clark, shortly after their submersion, gave the following measurements:

CABLE OF 1865.	
Total conductivity resistance.....	7,650 ohms.
" insulation "	1,505,000 "
" electro-static capacity.....	670.4 farads.
CABLE OF 1866.	
Total conductivity resistance.....	7,270 ohms.
" insulation "	1,316,000 "
" electro-static capacity.....	654.5 farads.

The battery employed is that known as Minotti's, a modified form of Daniell's, in which the zinc rests upon a column of wet sawdust, at the bottom of which is a layer of sulphate of copper, a copper disk being at the base of all. The electro-motive force of a Minotti cell was experimentally found by Mr. Farmer to vary from 0.75 to 0.95 volt, averaging 0.84, while the average of four ordinary Daniell's cells gave 0.923 volt. Hence he estimates that, after the full strength of the current is developed, one cell should give upon one cable with earth connection about 110 farads per second.

The manner in which Prof. Gould's researches and experiments were conducted, in order to determine as far as possible the questions above referred to, is given at considerable length. Much embarrassment was experienced, owing to the totally different character of the methods and appliances from those which had come within the previous experience of the longitude parties, and the difference in nomenclature rendered telegraphic instructions difficult, ambiguous, and, as the event proved, often ineffective. Prof. Gould states that, although the cables

were in continual requisition for commercial purposes, yet the most cordial interest was shown, and the most friendly aid extended by the telegraphic staff on both sides of the ocean, and that every facility was accorded which he could conscientiously ask.

The following extracts will serve to show the conclusions arrived at by Prof. Gould, after carefully working up the results of his investigations:

"These experiments are entirely confirmatory of what would have been anticipated from theory, viz, that a signal given by closing a galvanic circuit is transmitted in both directions simultaneously and with equal velocity under similar circumstances, so that under no ordinarily practicable circumstances could a signal from either station fail to traverse both parts of the circuit at that station before passing on to the other."

"Since the investigation in 1850* to which I have alluded, the progress of science has thrown light upon many points which were then subjects of doubt or of individual opinion. The condition of an open galvanic circuit is now almost universally conceded not to be essentially different from that of an interrupted conductor to an electrical machine. The velocity of a current is also known to be dependent upon its quantity, and therefore generally upon its intensity, as well as upon the resistance of the conductor. But it appears questionable whether the law is so simple as has been supposed by some, who have regarded the velocity as universally proportional to the capacity of the conductor, multiplied by its resistance, and therefore, in a homogeneous conductor, to the square of its length; for the problem, as it now presents itself, does not pertain so much to the time for transmission of a given signal as to the time for its transmission with a certain force, depending upon the sensitiveness of the receiving apparatus, since the electrical impulse or disturbance consists of a continuous series of molecular influences, which propagate themselves in every possible direction, according to the inverse ratio of their several resistances; and the form of the conductor, as well as other conditions, may essentially modify the time requisite for the attainment of the prescribed force at the other end of the line. A current may thus be temporarily established in part of an open circuit, continuing until the battery and conductors have attained an electro-static equilibrium. The time required for attaining this equilibrium depends, of course, simply on the capacity and form of the conductors and on the energy of the battery; but the first electrical impulse may reach the most remote point of the circuit before a portion nearest the battery has received its full charge. Similarly, in a closed circuit, the distant extremity of a line may well be supposed to perceive some slight electrical disturbance from a signal before its full force is manifest at intermediate points—so that a signal might be received with a delicate galvanometer at the farther extremity before it could be recognized upon an electro-magnet at half the distance—and this, too, apart from any consideration of increasing intensity in the electro-motor."

"The circuit formed by the two cables might, although broken at Valencia, thus serve to establish what would practically be a momentary current at Newfoundland, when the battery at that station was introduced, deflecting the galvanometer there for an instant; and the change of statical condition in the cables at Valencia would thereupon be manifest to the electro-scope. Thus, a signal given by closing or interrupting an insulated circuit at any point is instantaneously transmitted from that point in both directions, and at full speed; but the interval before it attains its total force at any other point must depend upon the character of the intervening conductor. The question as to the route by which signals

* Proc. Amer. Assoc. Adv. Sci., 1850, p. 71; Am. Jour. Sci., XI, 67, 164.

are transmitted, when part of the circuit is formed by the earth, is thus disposed of, and the position maintained in the memoir above cited seems entirely corroborated, although it loses its theoretical significance."

A number of experiments were made to determine the relative velocity of signals given by breaking the circuit, as compared with those given by closing an open circuit. The following table, selected from a number, will serve to indicate the nature of the results:

NEWFOUNDLAND SIGNALS.—VALENCIA BATTERY.

DATE.	EARTH CONNECTION	Transmission Time.		EXCESS FOR MAKE CIRCUIT.
		MAKE CIRCUITS.	BREAK CIRCUITS.	
Nov. 1.	Zinc.	0s. 65	0s. 39	+0s. 26
" "	None.	0. 80	0. 61	+0. 19
" 10.	Middle.	0. 64	0. 22	+0. 32
" "	Zinc.	0. 73	0. 30	+0. 42
" "	None.	0. 47	9. 31	+0. 16

These results indicate "a difference in velocity for the two kinds of signals, which becomes very large when the tension at any part of the circuit is disturbed by an earth connection, and they also indicate that a full charge or discharge of the cable is not requisite for a make circuit or break circuit signal."

"In the experience of the Coast Survey, since 1851, the break circuit signals, which have exclusively been employed for longitude determinations, have varied comparatively little in their velocity. This question has been investigated in every instance, and in many cases large changes have been made in the battery power, and in the connections, for the purpose of observing the effect upon the transmission time. I have no access to the records of these experiments at present, but the results have been in general shown that with a well insulated line of uncoated (No. 9) iron wire (the earth itself forming part of the circuit) the time required for the signals to reach their destination is not far from 0s. 07 for each thousand miles, or roughly, that their velocity is 22,000 kilometers (13,670 miles) per second. The necessary interpolation of repeaters between Heart's Content and Calais precludes any determination of the electrical action; but the average time consumed in the passage of a signal between those two stations was 0s. 277, the distance being 1,090 miles, with four repeaters interposed."

After the necessary corrections were made the following values were found for the mean time of transmission of signals, upon the five nights when the longitude was determined:

1866. Oct. 25.	0s. 314	Cable of 1865, with earth and condenser.
" 28.	343	" "
" Nov. 5.	230	Both Cables looped; no earth.
" 6.	248	" "
" 9.	240	" "

The battery strength on those nights was as follows:

Oct. 25.	10 cells at Valencia, 10 cells at Newfoundland.
" 28.	" 10 "
Nov. 5.	" 8 "
" 6.	" 10 "
" 9.	" 10 "

It was intended that the Newfoundland battery should in each case be of equal strength with the Valencia battery; through misapprehension of instructions this was not the case; yet, from the results above given, the inferences seems warrantable—1st, that the velocity of transmission is greater when the circuit is direct, and consists of a good metallic conductor exclusively, than when the signals are given by induction, although the earth may be at the other electrode; and, 2d, that an increase of intensity in the electro-motive force is attended by an increase in the velocity of propagation of the signal.

Professor Gould states that his experiments were inadequate for any decided deductions regarding the relative velocity when the earth forms a part of the circuit, but the apparent time of transmission was nearly the same in both cases, being about 0.24 seconds, with a battery of four cells. The result of the experiments justified the assumption that the positive and negative currents travelled with equal velocities.

The report concludes with the following remarks:

"It is not without hesitation that I present the facts and inferences of this chapter. For I am not aware of the careful and thorough quantitative investigations of Thomson, Jenkin and others, and should, of course, shrink from publishing these relatively crude and very incomplete results, were it to be supposed that I regarded them as comparable with those obtained by those distinguished electricians. But the opportunity of adding some few facts to those heretofore established seemed worth improving, although obtained with no special apparatus, and entirely collateral and subordinate to the astronomical purposes of the expedition. And furthermore, the question has an especial interest for me, as having been among the first to demonstrate and measure, nearly 20

years ago, the transmission time of the galvanic signals which had previously been assumed to be instantaneous."

"It appears manifest that not an electrical charge or discharge, but simply an electrical disturbance, is requisite for transmitting a signal; that an inductive impulse, sufficient to deflect the galvanometers employed, and transmitted through one cable, having at each end a condenser with 10 cells, in somewhat less than the third of a second, five seconds after the transmission of an impulse of the opposite sort; that with a circuit formed by the two cables, a smaller electro-motive force sufficed to transmit the signals with yet greater rapidity; that the signals travelled more rapidly through a cable which had not recovered its electrical equilibrium after a current of the opposite character, and that the speed of the signals is modified by the earth connections more readily than by changes in the battery power.* And the very marked difference found in the rate of transmission, between signals given by completing an interrupted circuit, and those given by interrupting a closed circuit, may perhaps lead to investigation which will afford an explanation."

Prof. Gould and his able assistants are entitled to great credit for their researches, prosecuted in the face of so many and unavoidable difficulties; and the results of their labors, as recorded in the report under consideration, will possess a permanent value to all engaged in this department of scientific inquiry.

F. L. P.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion.

No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., June 1.

TO THE EDITOR OF THE TELEGRAPHER.

ON Saturday, May 28th, Mr. Sumner presented in the Senate a petition from the American Cable Company of New York State, proposing to lay a cable from New York city to the Azore Islands, thence to Land's End, England, and thence to Havre and Amsterdam, and asking for such aid as Congress may be willing to extend. This is the same old ghost of a cable company first raised by J. N. and W. S. Worl, about five years since, and which makes its appearance in Congress periodically, begging for assistance. It is safe to presume that all the aid Congress will be willing to extend won't help the concern much.

In the House, on the same day, Mr. Smith, of Vermont, submitted a resolution, which was adopted, directing the Secretary of the Treasury to inform the House whether any telegraph companies in New York have neglected or refused to return to the assessor the gross amounts of their receipts, as required by law.

In the Senate, on Tuesday, Mr. Sumner reported from the Committee on Foreign Relations a bill carrying out the plan submitted by Mr. Field for a Pacific submarine cable between America and Asia, and incorporating the company.

The incorporators, as named in the bill, are Cyrus W. Field, Peter Cooper, Moses Taylor, Marshall O. Roberts, Wilson G. Hunt, Samuel F. B. Morse, Dudley Field, Wm. H. Webb, of New York, and Darius O. Mills, of California. It authorizes the construction and maintenance of one or more cables from California to China and Japan, either direct or by way of the Hawaiian or other islands, and grants the right of way where the United States have jurisdiction. The capital stock to consist of one hundred thousand shares and a total of ten millions in gold, with power to increase the same by vote of the stockholders when the whole amount has been subscribed and paid in, which shall be within one year from the organization. Nine directors are to be elected, a majority to be citizens of the United States, and no dividend shall be declared that would impair the capital stock. The office of the company shall be either at New York or Washington, and all meetings of the directors must be held at that office. The President is authorized to detail vessels to make surveys, soundings, &c., to assist in the work. The bill also provides that the Government shall have the right to transmit annually, free of charge over the line, messages on Government business to an amount not exceeding five hundred thousand dollars in any one year, all in excess to be paid for at regular tariff rates. In aid of the enterprise the Government

* Jenkin (Phil. Trans. OLII, 982,) arrived at the conclusion that the electro-motive force of the battery has no appreciable effect upon the velocity with which the current is transmitted. But he would, doubtless, consider that some qualifications to the general statement should be taken for granted."

is required to pay to the company annually, from its successful completion, \$500,000 in gold for twenty years. The line is to be completed in five years from the date of the Act. The tariff rates for messages of ten words, including address, date and signature, are as follows:

Between California and China.	\$30 in gold.
Between California and Hawaiian Islands, 5 "	
Thence to Midway Islands.	5 "
Thence to Japan.	10 "
From Japan to China.	5 "

and the same in proportion for every additional word over ten.

Aside from the above, nothing of interest telegraphically has occurred since my last week's communication.

CAPITOL.

The Close of the Land Offices of the French Cable Company.

NEW YORK, June 1st.

TO THE EDITOR OF THE TELEGRAPHER.

THE agreement by which the Western Union assumes control of the land line interests of the French Cable Company was put in force June 1st. The duty of notifying the employees of the necessity compelling a dissolution of their connection with the company had been performed previously, but yesterday evening the "staff" assembled in the private office of L. G. Watson, General American Agent of the "Société du Cable Transatlantique," to receive from him their final discharge. Mr. W. referred briefly to the satisfaction he had enjoyed in the discharge of duty by the employees, and testified to the zeal and fidelity that all had displayed in the service of the company, assuring all of his regret that we were now about to separate, and promising his future interest in the welfare of all.

The pleasure of receiving this assurance could only have been excelled by the unanimous acknowledgments of the courtesy and kindness by which the administration of affairs has been conducted by him.

Previous to this the operators at New York, Boston and Duxbury had assembled to say "good-bye." For some time the trained lightning carried to and fro the expressions of esteem in which all held their fellow laborers, who for ten months past have no occasion to refer with other than pleasure to our association. Amidst the hearty "God bless you," encored as it passed along the line, the regrets that we must under our relations for the present, and hopes of meeting again under happier auspices, the line was taken off of cable circuit and the "land line staff" ceased to be.

Under the promise of General Eckert all the operators not provided for already are satisfied they will have positions in a brief time. Owing to the temporary interruption of the cable between Duxbury and St. Pierre the arrangements of the W. U. for this circuit will be delayed.

In closing, I desire to pass a merited tribute to the manager, W. Albert, whose devotion to the interests of the company have only been exceeded by the gratification felt by all during his intercourse with us. N. E.

Success of Co-operation on the Bankers and Brokers' Line.

PHILADELPHIA, May 18.

TO THE EDITOR OF THE TELEGRAPHER.

HAVING seen nothing in our organ lately concerning the "Cooperative Telegraph Company," perhaps a few words as to its workings may be acceptable to the readers of THE TELEGRAPHER.

Under the supervision and direction of our faithful and courteous Superintendent, J. W. Dyer, the line has, with the assistance of all the employees, been successful beyond the most sanguine expectation. For the first time since the line has been built the receipts for the first quarter, ending March 31st, 1870, have exceeded expenses nearly two thousand dollars, and the prospect for a "divy" is very encouraging.

Philadelphia main office has been removed to 310 Chestnut street, which has been very handsomely fitted up, though without any very lavish expense, yet with a strict regard for the comfort of the operators and clerks. Mr. Mott is chief operator, and keeps his eyes open all the time, working for his little Christmas present—i. e., "divy." He is assisted by Messrs. Buckwell, Wynne, Mills (old Jesse) and Habliston. Our friend and cooperator, Scott, has deserted us and accepted a position with the American Press Association. We were sorry to lose him, but he is in good hands, with De Moll, the resident agent of the A. P. A.

Our branch offices are managed by Richard Smith, at "Cx." (and, confidentially, he's a brick), who knows how to run an office to make it pay; in fact, his receipts are like his friends, very heavy, and the big end of Philadelphia totals; Zeigler (William) runs "X" office at the

Exchange, and is doing a splendid business, both on the bull and bear party. He makes it pay whether stocks are up or down. Mr. Vandersloot has the Delaware avenue office, and does the business of the commission and produce men. Yeakle, at "C. H.," manages to pick up a few crumbs from the merchandise, cotton and dry goods trade. I am told he manages to pay expenses.

At 105 Chestnut street we are all working for our bread and LASSIES, and our friends doing business near us give us all their quarters to help us. This is the fruit of capital giving labor a chance. If it had not been for the cooperative plan on this line the B. & B. Co. would have been to-day as a tale that was told. MOSES.

Fraternal Interest in "The Telegrapher."—Caution to Eastern Telegraphers.

WADSWORTH, NEVADA, May 7th.

TO THE EDITOR OF THE TELEGRAPHER.

It is with much pleasure I send you the accompanying names of subscribers for THE TELEGRAPHER. This is the result of an attempt to extend the circulation of our paper on this division of the Central Pacific Railroad, and I think you will receive more subscriptions from the operators on this division soon. Many of us out here in the sage brush take a lively interest in the success and permanency of our organ, especially now that it has incurred the wrath, and is the object of fierce persecution from some of the small souled officials of the would be great telegraphic monopoly, for its able and fearless advocacy of the rights of an intelligent class of employes, whose conditions and prospects seem constantly to grow more discouraging, and which threaten to become unendurable to any but those of the meanest ambition and attainments.

Telegraphic affairs have been very quiet on this coast since the strike. Salaries were considerably reduced on the Central Pacific Railroad, being now about down to "working wages," and the flush times are recognized as being about over in this part of the country. It will do no harm to mention, for the benefit of telegraphers in the East, that at present there is little or no chance for operators to secure positions on the Pacific coast. There are now many telegraphers here out of employment and "dead broke," who are daily passing eastward along the line of the railroad, and even "footing it," when not fortunate in getting "dead headed" by train, and dependent upon their more fortunate brethren for an occasional "square meal."

It is generally understood here that we are very soon to have a vigorous opposition to the Western Union monopoly, and that the Atlantic and Pacific Company are now completing arrangements with the Central Pacific Railroad Company for the use of their wires for through business, in connection with those of the Union Pacific Railroad Company. With the advent of the new company we anticipate a brightening of the telegraphic horizon.

SAGE BRUSH.

PERSONALS.

Mr. LAWRENCE McPARLIN, formerly manager of the Lockport, N. Y., office of the A. and P. Telegraph Company, has been appointed chief operator of the Buffalo, N. Y., office of the same company. The *Lockport Daily Journal* speaks in very complimentary terms of Mr. McPARLIN, and the ability which he has displayed in the management of the Lockport office.

Mr. W. W. CUMMINGS has been appointed and accepted a position as day operator in the train despatching office of the U. P. R. R., at Rawlins, W. T.

Mr. S. W. KNAPP, formerly of the Western Union office, at Sacramento, Cal., has accepted the situation of train despatcher and division operator at Wadsworth, Nev., of the Truckee Division of the Central Pacific Railroad.

Mr. C. D. MONTANYE, for the past two years train despatcher, has been appointed division superintendent of the Truckee Division of the C. P. R. R.

Mr. M. O. BAGLEY, formerly of the Western Union New Orleans office, has for the present accepted a position as night operator at 145 Broadway, in this city.

Electric Batteries.

It is well known that the action of the bichromate of potassa and sulphuric acid battery is unsatisfactory. It is not constant, and it polarizes strongly, not by reason of the gas which it disengages, but on account of a deposit of chrome alum on the zincs. M. Chuteaux obviates this inconvenience by the addition of bisulphate of mercury, and by disposing the elements in such a way as to insure frequent removal of the liquid. The battery is said to be much more powerful, surface for surface, than the Bunsen battery.

THE TELEGRAPH.

(By Cable.)

THE FRENCH ATLANTIC CABLE BROKEN.

LONDON, May 28th.—Communication by the French Cable suddenly ceased on the evening of Thursday, the 26th inst., between Duxbury and St. Pierre. A vessel will leave England immediately to repair the same. Meantime all messages will be transmitted via the Newfoundland lines, thereby preventing any delay in business between Europe and America.

TELEGRAPH EXTENSION.

LONDON, May 31st.—The new telegraphic cable from Falmouth to Malta, has been successfully laid to Lisbon.

CENSORSHIP OF THE TELEGRAPH.

ROME, May 31st.—A strict censorship over telegraphic despatches has been established in Rome by the Papal Government.

Meeting of Directors of the Western Union Telegraph Company.—Dividend Passed.

A REGULAR meeting of the Directors of the Western Union Telegraph Company was held on Wednesday, June 1st, at the executive offices of the company, No. 145 Broadway. Upon consideration of the present financial condition of the company, it was decided to pass the half yearly dividend usually declared at this time, in consequence of the severe losses caused by the strike in January last, and the reduction of tolls consequent upon the partial competition which has been established. The report of this omission of the usual dividend depressed the price of the stock to 31½.

Annual Election, Franklin Telegraph Company.

THE annual meeting of the Franklin Telegraph Company was held at Boston, Mass., on Wednesday, June 1st, at the office of the Company, No. 2 Congress street.

George H. Ellery was re-elected President; Samuel L. French, Treasurer and Clerk, and the following Directors: J. W. Brown, Samuel B. Sterns, S. C. French, Oliver Ames, John Duff, Sidney Dillon, Elisha Aitkins and Royal E. Robbins.

The West India and Panama Cable.

THE Kingston, Jamaica, correspondent of the *New York Herald* writes, under date of May 5th, as follows:

"The United States steamer of war Yantic came into port on the 3d inst. from Havana and Santiago de Cuba, with Sir Charles Bright and other officers of the West India and Panama Telegraph Company, to make preparatory arrangements for the laying of the cables which are to unite the West Indies and Panama with Europe and America.

"The British ship Millicente arrived here on the 29th ult. with a large portion of the cable. The steamer Suffolk, with more cable and the grappling apparatus of Sir Charles Bright, is expected from London via New York on the 17th. The steamer Dacia, with a large quantity of cable and electrical apparatus, was to leave London for this port on the 2d inst., but on her way hither she will stop at St. Thomas to embark Sir Charles Bright, who will come on in her to Jamaica. The Dacia will be followed by the steamer Titian early in May, and the British ship Bonaventure has sailed already.

"By the British packet due here on the 21st inst. we will have twelve English operators selected from the principal telegraph offices, and a number of station masters and signal men will follow by the British mail packet on the 5th of June, to be drafted off to the various islands as they are required. Sir Charles Bright leaves this in the British mail packet Seine, for St. Thomas; and he is of opinion that the cable between this island and Havana, connecting with New York and Europe, will be in complete operation by the first or second week in June."

FOREIGN TELEGRAPHIC NOTES.

WITH regard to the Franco-Egyptian Telegraph Company, it is officially notified that "the majority of applicants for shares in this company (who are principally residents in France) having failed to pay their subscriptions, and having decided to carry out the undertaking by means of a society, to be established under French law, the directors have determined to return to those who have paid the amount received from them, without any deduction for expenses." It will be remembered that this company proposed to lay a cable direct from Marseilles, in the south of France, to Algiers, near Bura, and from thence to Alexandria, going over precisely the same ground as contemplated by previous companies.

At a meeting of the Anglo-American Company it was resolved to pay, on June 7th next, a dividend *ad interim* of two per cent. on the new consolidated stock of the undertaking. The 1866 cable belonging to this company is still broken down. The new repairing ship, the "Robert Lowe," is being rapidly fitted up with necessary machinery, and it is expected that, in the course of a few weeks, she will be ready for sea. She is commanded by Capt. Blacklock, late of the "Monarch," the repairing ship belonging to the Electric and International Telegraph Company.

The service between India and England, by both the Indo-European and British-Indian routes, continues to be carried on in the most satisfactory manner, messages being received with great accuracy and with no delay.

The Submarine Telegraph Company have had a special general meeting, to consider the question of raising additional capital, in order to lay a new cable from Havre to England, in conformity with the terms required by the convention entered into between the company and the French Government. The meeting authorized the extra expenditure, amounting to about £41,500, including cost of laying and all other incidental expenses. It is intended to lay a heavy cable of ten tons to the mile, and with shore ends weighing eighteen tons to the mile.

During the last half year an increase of 1,200 messages per week over the corresponding period of 1869 has taken place, representing an annual increase of receipts of about £10,000, and it is anticipated that the new cable, by affording direct communication with the important towns in the west of France, will produce a further increase in the receipts.

The Submarine Company also contemplates the expenditure of £15,000 for the purchase of a steamship fitted with all the necessary machinery to undertake the repairs to their many cables, which have hitherto been executed by means of vessels specially hired for the purposes.

The entire amount of the West India and Panama cable is nearly completed, and will shortly be forwarded. The "Dacia," with the major portion of the staff and 900 miles of cable, left previous to May 14th.

A commencement has been made with the manufacture of the British Australian cable to connect Singapore with Australia, about fifty miles already having been completed. The cable is being made by the Telegraph Construction and Maintenance Company, at their works at Greenwich.

The cable for Marseilles, Algiers and Malta has been commenced at North Woolwich, and about 170 miles completed. The Australian and Marseilles cables introduce a novelty in the insulated core, an improvement of Mr. Willoughby Smith's, whereby the inductive capacity of the gutta percha is reduced about twenty per cent., or equal to india rubber.

The telegraph line from La Libertad to the capitol at Salvador, Central America, is completed and in working order.

The law of the United States of Colombia, under which telegraph companies were taxed five per cent. of their net receipts, has been annulled, and another passed in March last, which only exacts that government despatches shall be transmitted free.

New Patents.

For the week ending May 17, and each bearing that date.

No. 103,150.—SIGNAL BOX FOR FIRE ALARM TELEGRAPH. Sylvanus D. Cushman, New Lisbon, assignor to the Automatic Fire Alarm Company, Leetona, Ohio.

Claim.—1. Extending the knob or handle L of the winding lever K of an automatic fire alarm mechanism through the slot U in the inner door C of the signal box, for the purpose of enabling the operator to grasp said knob or handle on the outside of the door C, and thus operate the winding lever, substantially as is herein specified.

2. The covering piece M, secured on the winding lever K, and operating in connection with the slot U in the door C, substantially as is herein specified.

3. The combination of the screw cup E', anvil a, electrically connected with the screw cup E' by an electrical circuit through the automatic apparatus / G H, spring k, screw cup E, rod i, and outer door D, with push knob X, the several parts being arranged substantially as and for the purpose specified.

4. A signal box for fire alarm telegraphs, provided with suitable operating mechanism, and with a switch mechanism, so constructed and arranged as that the closing of the outer door of the signal box acts to switch the electro-magnets out of the main circuit, but leaves the operating mechanism in said circuit, whether said operating mechanism be or be not automatic, as is hereinbefore specified.

Recent British Patents.

Provisional protection for six months.

No. 765.—GUSTAVE JATTE, Berlin, Prussia.

An improved telegraph 15th March, 1870.

BORN.

POPE.—At South Lee, Mass., May 27th, to RALPH W. POPE, of the Bankers and Brokers' Telegraph Company, in this city, a daughter.



SATURDAY, JUNE 4, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE
NATIONAL TELEGRAPHIC UNION.

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Vice-President. W. O. LEWIS....New York.

Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.

Recording Sec...W. W. BURHANS...Box 6010, P. O., New York.

Corres. Sec....F. L. POPE....Box 6010 P. O., N. Y.

OUR PREMIUM OFFER.

OUR last premium offer was limited to subscriptions forwarded on or before the 31st of May, but we have decided to extend it to July 31st. We are under obligation to the many friends who have responded with subscriptions to this appeal. The efforts of powerful and influential enemies of a telegraphers' organ to destroy it have been baffled and defeated. The telegraphers of this country are not yet such miserable serfs as to submit quietly to the dastardly attempts of their would-be masters to dictate to them what papers they shall read and support.

We now once more appeal to every telegrapher, who desires to be a free man as well as an operator, to aid us not only in maintaining but increasing the influence and extending the circulation of this paper. The efforts to destroy it are convincing evidence of its usefulness and power, and of the necessity which exists for its liberal support. Let every telegrapher, then, by whatever company employed, realize this fact, and if not already a subscriber, at once forward his or her subscription, and when that is done, see that the matter is brought to the attention of his or her acquaintances or associates. To us, personally, the maintenance of this paper is not of material consequence. The time we devote to it could be more profitably employed in other business. To the telegraphers of this country its continued appearance is of the utmost importance.

With such additions to our subscription list as should at once be made we could give our readers a better paper than ever before. The importance of the telegraph increases from year to year. Its future no one can predict. Within a comparatively brief time the earth will be girdled with telegraph wires. The number of telegraph employes is yearly increased. This is the *only* organ of the telegraphic profession in the world. For nearly six years the telegraphers of the United States and of the British Provinces have honored themselves by supporting and maintaining an organ. That organ has steadily advanced in influence and character, and we desire that in the future it shall be more influential and beneficial than ever before. While it exists telegraphers cannot become the mere hirelings which such men as ECKERT and STAGER, who now seek to compass its destruction, would make them. Every sentiment of self-respect and self-

interest call upon them, therefore, to see to it that their organ is not only sustained, but so liberally supported as to make it what it should be, and what its several conductors, to the extent of their ability, have sought to accomplish.

To those true friends who have stood by the paper in the past we return our heartfelt thanks, and hope not only for a continuance of their efforts, but for such coöperation on the part of others as shall so increase the number of our supporters as to enable us not only to complete this, the SIXTH VOLUME, successfully, but insure its future permanence.

Transfer of the French Cable to the Western Union Offices.

UNDER the agreement with the Western Union Company, by which that company takes charge of the American interests of the French Cable Company, the offices of the latter company in this city and at Boston were closed on the 1st of June. Hereafter the Western Union Company again monopolizes the cable business, and is not likely to be seriously disturbed in that monopoly until more common sense is infused into the management of the competing companies. The French Company was compelled, for the lack of the necessary facilities for the collection and distribution of its business outside of the Western Union Company, either to construct a system of land lines for itself or to make terms with that company. Until this difficulty is remedied, which we see no probability of being done under the present management of the competing companies, any other cable which may be laid to this country will be forced to follow the example of the French Company and connect with the Western Union, in order to secure the necessary facilities for the transaction of its business.

Increase of Facilities of the Atlantic and Pacific Telegraph Company.

We understand that the directors of the Atlantic and Pacific Telegraph Company have given orders for an immediate and large increase of facilities for their business between this city and Chicago. This addition to their present wires is imperatively required by the increase of business consequent upon the new California connection.

Uncertainty of Cable Property.

AS will be seen by an item under our "Telegraph" head, the French Transatlantic Cable is broken between Duxbury, Mass., and St. Pierre. At this time, therefore, of the three cables connecting this continent with Europe, only one, the Atlantic Cable of 1865, is in operation. The French Cable will be repaired as soon as possible, as a steamer is now being prepared in England and will sail immediately for that purpose.

This accident shows the uncertain character of telegraph cable property, the interruption of business, and the large expense to which the companies are liable at any time, and explains why it is necessary that charges for such service are necessarily high. The increase of business consequent upon the reduction of tolls, and the previous competition between the Atlantic and French Companies, will rather crowd a single cable, but we presume no material delay will be experienced.

Novel Telegraphy.—Electrification of an Island.

THE following communication from Mr. FLEMING JENKIN, published in the English papers, brings forward a novel fact in the history of telegraphy. We have heard of this before from a gentleman connected with the French Cable Company, but have been awaiting details and an explanation of the phenomena before presenting it to our readers:

"A curious discovery has been made by Mr. Gott, the

superintendent of the French company's telegraph station at the little island of St. Pierre Miquelon. There are two telegraph stations on the island; one, worked in connection with the Anglo American company's lines by an American company, receives messages from Newfoundland and sends them on to Sidney, using for the latter purpose a powerful battery and the ordinary Morse signals.

"The second station is worked by the French Transatlantic Company, and is furnished with exceedingly delicate receiving instruments, the invention of Sir William Thomson, and used to receive messages from Brest and Duxbury. These very sensitive instruments were found to be seriously affected by earth currents, i. e., currents depending on some rapid changes in the electrical condition of the island; these numerous changes caused currents to flow in and out of the French company's cables, interfering very much with the currents indicating true signals. This phenomenon is not an uncommon one, and the inconvenience was removed by laying an insulated wire about three miles long back from the station to the sea, in which a large metal plate was immersed; this plate is used in practice as the earth of the St. Pierre station, the changes in the electrical condition or potential of the sea being small and slow in comparison with those of the dry rocky soil of St. Pierre. After this had been done, it was found that part of the so-called earth currents had been due to the signals sent by the American company into their own lines, for when the delicate receiving instrument was placed between the earth at the French station and the earth at the sea, so as to be in circuit with the three miles of insulated wire, the messages sent by the rival company were clearly indicated—so clearly, indeed, that they have been automatically recorded by Sir William Thomson's syphon recorder.

"It must be clearly understood that the American lines come nowhere into contact, or even into the neighborhood of the French lines. The two stations are several hundred yards apart, and yet messages sent at one station are distinctly read at the other station, the only connection between the two being through the earth; and it is quite clear that they would be so received and read at fifty stations in the neighborhood all at once. The explanation is obvious enough: the potential of the ground in the neighborhood of the stations is alternately raised and lowered by the powerful battery used to send the American signals. The potential of the sea at the other end of the short insulated line remains almost if not wholly unaffected by these, and thus the island acts like a sort of great Leyden jar, continually charged by the American battery, and discharged in part through the short insulated French line. Each time the American operator depresses his sending key he not only sends a current through his lines but electrifies the whole island, and this electrification is detected and recorded by the rival company's instruments.

"No similar experiment could be made in the neighborhood of a station from which many simultaneous signals were being sent; but it is perfectly clear that unless special precautions are taken at isolated stations, an inquisitive neighbor, owning a short insulated wire, might steal all messages without making any connection between his instrument and the cable or land line. Stealing messages by attaching an instrument to the line was a familiar incident in the American war; but now messages may be stolen with perfect secrecy by persons who nowhere come within a quarter of a mile of the line. Luckily, the remedy is simple enough. All owners of important isolated stations should use earth plates at sea, and at sea only. This plan was devised by Mr. Varley many years ago, to eliminate what we may term natural earth currents, and now it should be used to avoid the production of artificial earth currents, which may be improperly made use of."

Magnetic Springs.

THE Cleveland, O., *Herald* contains a description of magnetic springs recently discovered at Eaton Rapids, Michigan. The water from the springs or wells for they were reached by boring, is said to be so highly charged that a common jack-knife, drawn a few times across the iron heading on the tube, will pick up an eight-penny nail. Pitchers and tin pails, after standing some time with this water in them, become corroded as with iron rust. A great many marvellous cures are said to have been effected by the use of these waters, especially of rheumatics and paralytics, and considerable excitement prevails in the region of the springs on account of the wonderful discovery.

THE manufacture of the cable for the British Extension Telegraph Company, for submerging between India and Singapore, is being rapidly proceeded with, and at the last advices about 1,250 miles had been finished. As yet none of the cable had been shipped.

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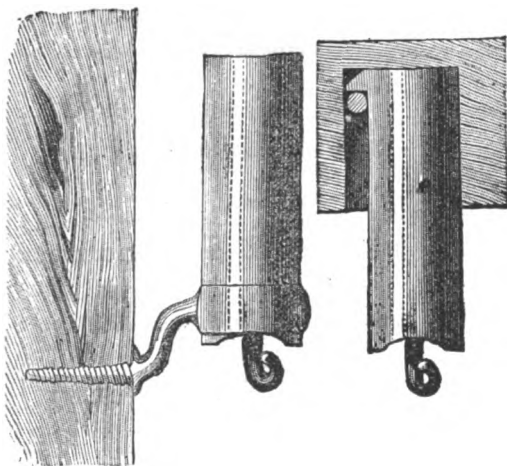
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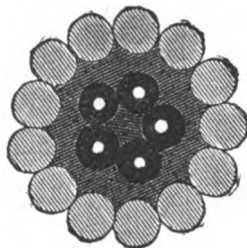
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After the experience of several years in the use of KERITE for purposes of insulation, we have concluded to adopt it as the very best substance for wire covering, not only for use of offices but for SUBTERRANEAN, SUBMARINE and AERIAL LINES. We have used it unprotected for years under ground, and exposed to the most injurious atmospheric influences—to heat, cold and moisture—and have yet to learn its failure, when other ordinary insulating substances would have been rapidly destroyed. UNDER WATER it has retained an electrical charge for many hours, thus ranking it in the HIGHEST GRADE of NON-CONDUCTORS.

We have, therefore, made arrangements not only to secure THE EXCLUSIVE AGENCY for its sale, for the purposes for which we have already sold it so largely, but to furnish complete

IRON-CLAD CABLES,

of the usual size, with KERITE COVER, believing that it will exceed, in insulation for submarine purposes, ANYTHING HITHERTO MANUFACTURED.

We shall be happy to furnish estimates for any amount and size of cable, which will be found to compete with any other construction, both in quality and price.

In corroboration of our statements we append extracts from reports of those who have exposed it to the severest practical tests.

From Prof. SILLIMAN, of Yale College, Nov. 10, 1868.

"I am satisfied, as the result of my own researches, that ozone is by far the most fatal of atmospheric influences. I have submitted portions of KERITE to the action of a highly ozonized air for a sufficient length of time to prove them, and at the same time have exposed the best English Gutta-Percha Covered Cable to the same tests, with the following result: After long experience KERITE resists perfectly! The best English Gutta-Percha Cable was speedily destroyed. A few days' exposure to ozone would produce more effect than many years in a normal atmosphere, exposed to carbonic disulphide, nitric acid, sulphuric acid, sulphuric dioxide, nitric peroxide, chlorine gas and alkaline hydrates. Gutta-Percha is immediately dissolved in carbonic disulphide, and powerfully acted upon by alkaline hydrates. Some samples of KERITE resist the action of the former in a surprising manner, and are completely unaffected by the latter."

"NEW YORK, May 14, 1870.

"In nearly two years since the foregoing was written I have made a considerable number of experiments upon the KERITE Compound of A. G. DAY, all of which tend to confirm former results; while the practical test of the continued use of electrical conductors covered with it, and the growing favor with which they are received by electricians, offers the best guarantee of its permanent value.

"B. SILLIMAN."

From MOSES G. FARMER, of Boston, Mass.

"I have tested 195 feet of this wire, and found it a better insulator than Gutta-Percha.

"The instrument used would have shown a current through 300,000 miles of Telegraph wire. The 195 feet showed no leakage in water. The KERITE insulated wire withstands atmospheric agencies wonderfully, and will last for years when exposed to the atmosphere; likewise, when buried in the earth, there is no reason to apprehend decay. It is a well known fact that Gutta-Percha deteriorates very rapidly when exposed to atmospheric influences, and therefore cannot be advantageously used for the covering of wire for out-door exposure unless buried in permanent moisture."

From Mr. E. A. CALAHAN, Supt. Gold and Stock
Telegraph Co., May 14, 1870.

"Under all circumstances it has given me the fullest satisfaction. The peculiar nature of our business renders it necessary for us to use the most perfectly insulated wire. I have tried several kinds of insulated wire, but have been compelled to take down and substitute KERITE instead. Wire strung a year since is as good as the first day put up. Have tested it after three days' constant rain and could not find one degree of escape. We use it in gas pipes, and sometimes placed near furnaces subject to very high temperature. I have not been able to detect the slightest change from its original condition.

"We have exposed it to the extreme cold and heat of the past two years and a half, strung over the roofs of buildings, which we consider the best test of its indestructible and insulating qualities."

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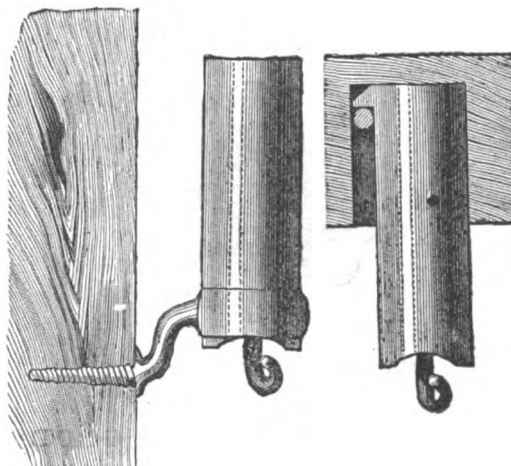
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This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES and INJUSTICE practised by them upon its employees, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

The President of that Company, however, distinctly disavows this action, and says, in a communication to the editor of THE TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S) 'discontinuance and discountenance' a test of competency for our service."

It remains to be seen whether the Practical Telegraphers of this country CAN BE RELIED UPON to stand by those who seek to secure to them JUSTICE AND FAIR TREATMENT.

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He is also manufacturing the

IMPROVED BUTTON REPEATER,

the cheapest, most reliable and simple repeater as yet invented

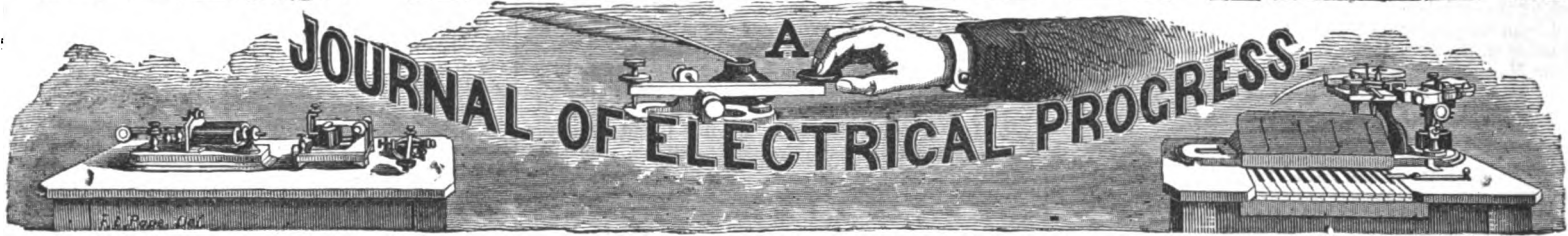
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Relays, with helices in bone rubber cylinders (very fine).....	19 50
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THE TELEGRAPH.



Vol. VI.—No. 42.

New York, Saturday, June 11, 1870.

Whole No. 204.

[From the *Scientific American*.]

RECENT ADVANCES IN ELECTRIC SCIENCE.

BY C. WIDEMANN.

New Electric Battery.

THIS battery is composed of a vessel containing hydrochlorate of ammonia in saturated solution, with an amalgamated zinc plate plunged therein; also a porous cup filled with carbonate of copper, having a copper plate plunged into it.

This new battery can be established at little cost, and in order to maintain its power it needs only a few pieces of sal ammonia added from time to time.

The carbonate of copper is insoluble in the solution of hydrochlorate of ammonia; but in closing the circuit the hydrochlorate of ammonia decomposes into hydrochloric acid and ammonia, the first going to the zinc pole and the other to the copper pole; the carbonate of copper becomes then soluble, and its solubility produces a secondary current of the power of a Daniell's battery.

For military telegraphic purposes, in order to render this battery transportable, the solution of sal ammonia can be replaced by sand, impregnated with the same solution.

Devo's New Electric Battery.

This very simple battery has been quite lately adopted by the Belgian Telegraph Administration, to work on an important line; it consists of a cylindric vessel, divided into two parts by means of a piece of gas carbon. In one of the parts a mixture of pulverized sal ammonia and coke is placed, and in the other part a zinc plate.

This battery is set in operation by adding pure water to the two compartments; the zinc decomposes the ammoniacal solution to form chloride of zinc. The positive pole corresponds to the graphite blade, and the negative to the zinc blade.

This battery is more powerful than the sulphate of copper battery.

Secondary Battery of Gaston Plauté.

When the two metallic plates which have been used to decompose water by a battery are joined together by a conductor a secondary current is obtained, called the current of polarization.

The intensity of this current varies according to the substance of which the plates are made, and its maximum action takes place when leaden plates are used.

This last property has been discovered by Mr. Gaston Plauté, who has constructed a battery in which he takes advantage of this polarization current.

A gutta percha cup, of a parallelepipedic form, contains six lead plates, separated from each other by a free space, and the even numbered plates are put into communication with one of the conductors and the odd numbered plates with the other conductor. The gutta percha cup contains water acidulated by sulphuric acid.

In attaching the two conductors—the rheophores of a small Bunsen battery—the current passes through the acidulated water and decomposes it. The positive leaden blades, where the oxygen is sent, are very soon coated with binoxide of lead. This latter having a great tendency to decompose water by its avidity for hydrogen, which action is the reverse of the electrolytic action, it happens then very soon that the decomposition of the water into its two elements, hydrogen and oxygen, ceases very rapidly. Then, suppressing the Bunsen battery and rejoining the conductors, to which the two systems of lead blades are attached, a current of a larger intensity than the one formerly used is obtained.

In using two lead electrodes, having a double surface of two square metres, Mr. Plauté has obtained similar results to those produced by seventy Bunsen cups of eight inches in height.

With the six leaden blades (having a dimension of about twenty to twenty-two centimetres) of the battery we have just described a large steel knitting needle is melted by having this polarization current passed through it.

To obtain results of quantity and tension, as desired, Mr. Plauté disposes near each other forty gutta percha cups, containing the acidulated water, in which twenty lead plates, about seven and a half inches square, are dipped. These blades are joined, as above described, by even and odd numbers, and the battery is worked as described to obtain results of quantity; but to obtain results of tension a peculiar commutator is used, joining together the lead blades in the following order: No. 2 with 3; No. 4 with 5; No. 6 with 7, &c.

In joining the two extremes a current capable of an enormous resistance is obtained, enabling a platinum wire of two metres in length and a quarter of a millimetre in diameter to be brought to a red heat. An iron wire burns immediately, and an intense light is obtained from a metallic point over a surface of mercury—also, in putting in contact two carbon points.

As it has been, this secondary battery is to the battery which charges it what the Leyden jar is to the ordinary electric machine.

Improvement on Smee's Battery.

A FRENCHMAN, M. Figuié, has succeeded in producing, but with considerable trouble, a cheap battery, on the same principle as Smee's. Instead of a simple platinum plate he makes plates of retort coke, paints them over with a strong solution of chloride of platinum, dries and then reduces the metal upon the coke by heating it in the fire. Silvered carbon may, however, be used, instead of platinized, but these plates are obtained with more trouble. The carbons are first done over with a solution of nitrate of silver, and are then, while moist, exposed to hydrochloric acid gas. In this way a coating of chloride of silver is procured which may be fused into the coke by heating. The silver will be reduced upon the carbon by the first action of the battery.

Plates made in either of these ways, M. Figuié says, are superior to the platinized silver or platinum plates hitherto used in a Smee's battery, the irregular surface promoting the escape of the hydrogen. The author details a method of giving a rough surface to the cut plates of retort coke; it consists in spreading the plates over with a mixture of diluted white of egg, or blood, albumen and syrup, and then carefully burning them until smoke is no longer given off. The process being repeated two or three times, myriads of points, the debris of minute vesicles, remain firmly attached to the original carbon plate. The plates thus made must be well washed in a large quantity of water, to remove any loose particles which might otherwise fix themselves accidentally upon the zinc, and set up local action. These carbon plates are very durable, the author having had some in use for three years; they are comparatively cheap, if troublesome to make, and the simplicity of the arrangement of the battery will, no doubt, recommend this modification. —*Mechanics' Magazine*.

Electrical Phenomena and Theories.

On Thursday, May 5, Professor Tyndall delivered his second lecture at the Royal Institution, London, on "Electrical Phenomena and Theories." There was a very large attendance. The lecturer began by describing the structure of the electrical contact breaker, known as the electro-magnetic hammer, after which he showed how an insulated helix of copper wire, covered with silk, acquires magnetic properties whenever a current of electricity passed through it. The current from a Grove battery of ten cells was passed through the helix, which,

although it contained no iron or other magnetic metal, had then the power to magnetically lift up a cluster of iron nails; directly the electrical circuit was broken the nails fell away from the helix. He then proved that the helix, thus transformed into a temporary magnet, has a north and south pole, and in all respects has the same properties as an ordinary permanent bar magnet of steel. Afterwards he explained the method by which Professor Jacobi and other Russian philosophers determined the strength of magnets, and how to estimate the value of the action of the helix, apart from the magnetism produced in the core of soft iron. While speaking of magnetic polarity, he said that each of two distinct kinds of magnetism may be regarded as self-repellent; north repels north, and south repels south, but different kinds of magnetism are mutually attractive. In estimating the strength of electro-magnets, if the cores be thick and formed of good iron, the magnetic strength of the core is exactly proportional to that of the helix. A helix of double power will produce an electro-magnet of double strength; a helix of treble power, an electro-magnet of treble strength, and so on. Thus, by varying the strength of the helix, we vary in like degree the strength of the core within it. And here an important point arises; when we allow a core of double power to act upon a piece of good iron, nearly but not quite in contact with the core, the attraction is not doubled but quadrupled. If the core be of treble power the attraction is not only trebled but it increases ninefold. If the magnetic strength of the core be quadrupled the attraction of the iron is augmented sixteenfold. In fact, the attraction is proportional, not to the strength simply but to the strength multiplied by itself, or to the square of the strength of the electro-magnet. To obtain very clear ideas as to the cause of this action it is necessary to contrast for a moment the magnetic action of hard steel with that of soft iron. Soft iron is easily magnetized, but it loses its magnetism when the magnetizing force is withdrawn. Steel is magnetized with difficulty, but it retains its magnetism even after the withdrawal of the magnetizing magnet. This obstinacy on the part of steel in declining to accept the magnetic state, and this retentiveness on the part of steel when the magnetic condition has once been imposed upon it, are called "coercive force." Supposing a piece of magnetized steel to possess a coercive force so high as to resist further magnetization, its attraction by an electro-magnet would be directly proportional, not to the square of the strength but simply to the strength of the electro-magnet. Iron follows the law of "square of the strength," because the magnetic condition of the iron is not constant, but rises with the strength of the magnet.

Prof. Tyndall then spoke of the wonderful discoveries of Faraday in diamagnetism, whereby the latter philosopher proved that all substances in nature are more or less acted upon by the magnet, though in a much feebler degree than iron or any of the other magnetic metals. He explained that diamagnetic substances are repelled instead of attracted by the magnet—in illustration whereof he suspended a little pellet of bismuth near one of the horizontal and pointed poles of a very powerful electro-magnet. The iron pole and the little ball of bismuth were then illuminated by the electric light, and an enlarged image of both of them was projected on the screen by means of a lens. The result was that the pellet of bismuth was seen by the whole audience to be repelled every time a current was sent through the coils of the electro-magnet. The force of diamagnetism is vastly feebler than that of ordinary magnetism. Of all diamagnetic substances, for instance, bismuth is most strongly repelled—but its repulsion is almost incomparably less than the attraction of iron. According to Weber, the attraction of a thin bar of iron exceeds the diamagnetism of an equal mass of bismuth about two and a half million times. Diamagnetic bodies, under magnetic excitement, exhibit a polarity the reverse of that of magnetic

bodies. Organic bodies and most crystals are magnetized with different degrees of intensity in different directions; they are endowed with axes of magnetic induction. Thus, in the case of Iceland spar, the repulsion along the axis is a maximum: in the case of carbonate of iron, a crystal of the same shape and structure as Iceland spar, the attraction along the axis is a maximum.—*The Mechanics' Magazine.*

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our Correspondents. Our columns are open to free discussions on all Telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., June 8.

TO THE EDITOR OF THE TELEGRAPH.

ALTHOUGH nothing has been done in Congress relative to telegraph matters since my last week's communication was written, there has been some rather important action in committees.

On Wednesday last the House Committee on Foreign Affairs took a vote on the question of granting subsidies to submarine cable companies, and decided against recommending such subsidies in any case at this session. This virtually cuts off any subsidy at present to the Pacific submarine telegraph project as well as the others. The impression, not only of the committee but of members of Congress generally and the public, is, that Mr. Field asks too much, and that while aid may very properly be given to so important an enterprise, half a million of dollars per annum is unreasonable either to ask or grant. However, it is pretty well decided now that all the telegraph and cable schemes before Congress must go over until next session.

The committee are still occasionally giving hearings to the advocates of some of the telegraph projects before them, but as they are likely to result in nothing, it is hardly worth while to occupy the crowded columns of THE TELEGRAPH with the details.

On Monday last, in the House, Mr. Willard, of Vermont, introduced the following Act, which was read and referred to the Committee on Foreign Affairs:

An Act to Facilitate Telegraphic Communication between the United States and the Bermuda Islands.

Be it enacted by the Senate and House of Representatives of the United States, in Congress assembled, that Alexander Hamilton, Jr., David Henry Haight, John Jacob Astor, Jr., Robert J. Livingston, William Curry, William G. Fargo, James T. Sanford, John Bigelow, William T. Blodgett, James A. Scrymgeour, George L. Schnyder and William Farrar Smith, citizens of the United States, their associates, successors and assigns, are hereby authorized to lay and work and maintain Telegraphic Submarine Cables between the coasts of the United States and the Bermuda Islands, subject to any previous grants by Congress, and to such general laws as Congress may establish for regulating telegraphic intercourse with foreign nations, and subject also to all rights of property and State jurisdiction. Provided no exclusive privilege shall be obtained for landing the cables referred to in this Act on the Islands of the Bermudas.

The names of the corporators are suggestive, and a guaranty that if the bill should pass the line would be immediately laid. There is reason to believe that there is something more in this movement than appears on the surface. CAPITOL.

The Electric Light.

TO THE EDITOR OF THE TELEGRAPH.

It was my good fortune, a few days since, to make a trip to Sandy Hook, by invitation of and in company with our mutual and old time friend, Walter O. Lewis. The day was got up regardless of expense by the clerk of the weather, in the way of bright skies, cool breezes and smooth water. After a short walk, upon reaching the Hook, we arrived at the telegraph station, where we found the veteran Farrell and Mr. —, the operator. They were mighty glad to see us—to break the monotony of their isolated existence. The sight of Farrell reminded me of the days of yore, when I have held telegraph lines open o' nights from one end of the country to the other, awaiting his return from boarding steamships, with that old dose of three to five thousand words of European news, to be disseminated to the Associated Press ere the welcome words "good night" could be given to the over-worked operators and night editors of newspapers. After an uninteresting discussion (to me) relative to "crosses" and "grounds," which is very intelligible to you and other telegraphers, some conclusion was arrived at by the operator, Farrell, and Superintendent Lewis. Business being through with, we settled into a chat upon various matters, taking a range from the time of the old Semaphore system of signalling vessels to the present day; and the old veteran gave us the experience of his first introduction to the electric light. He had often heard

that light described, but was not aware that the steamship St. Laurent, of the French line, had one on board. One night, while on the lookout (as he always is, for he sleeps but four hours out of the twenty-four, and those in the day time), a thick fog set in, through which he vainly endeavored to get sight of any vessel to the seaward. The fog bells could be heard from their different stations, and the lighthouses on the Hook shed their rays dimly but a short distance. Suddenly a great stream of light pierced through the dense fog, forming, as Farrell described it, a "streak miles in length," illuminating the highlands—then it shifted across the Hook, and, as it swept athwart the telegraph station, a glimpse of its intense light was perfectly dazzling; then it shot a long way up the harbor, and then over towards Long Island. It appeared to cut the fog in pieces, and seemed to leave a wake of light over the vast region of space through which it traversed. Farrell was on the point of telegraphing to the city that a large ship was on fire, for never before had such a brilliant light been seen in the neighborhood of the Hook; and, under the circumstances, he would have been justified in so doing, but he is a cautious man as well as prompt. But soon he heard sounds from the steamer which convinced him that it was the St. Laurent, and instead of creating an excitement throughout the country, by announcing "a steamer on fire below New York harbor," he simply announced the arrival of the St. Laurent. No one can be more earnest in commendation of this electric light than this old veteran. He says there is nothing like it on the water—that it is the only light that penetrates successfully a dense fog; and no one is better qualified from experience, both at the Hook and also at Cape Race—that home of fogs—than he to judge of the merits of this triumph over the elements of darkness. With this light at its bows a vessel's course can be seen by those on board in the thickest weather for miles ahead—thus rendering collisions with vessels or icebergs almost an impossibility. Perhaps the use of an electric light might have saved the City of Boston from becoming the tomb of so many valuable lives. Farrell now has got used to the great illuminator; and it will probably not be many years ere all our principal steamers will use them, and they will, like telegraphing, become "common."

Yours truly,

AMOS.

The Morse Testimonial.—Various Matters of Interest.

WASHINGTON, D. C., May 29th.

TO THE EDITOR OF THE TELEGRAPH.

SOME excitement has been caused here lately by the truths told in this correspondence, and there has been considerable inquiry as to who "Perdu" is. My statements are generally endorsed by the operators, although in the office the Western Union operators are indisposed to discuss them, for fear that they may be suspected of writing them. Outside of the office comments are numerous, and they do not hesitate to endorse them. "The iron rod still rules."

The Morse testimonial has met with a decided success here among the W. U. operators, every man subscribing, some as much as 50 cents, but not without considerable reluctance. This is a bitter pill for some of them to swallow. Would it not be just to start a list, and let every striker subscribe to pay the amount appropriated by various societies to support the memorable strike? If every striker throughout the country subscribes fifty cents the debt could be paid easily, and thus sustain the reputation of the operators. The Western Union would not dare to oppose it after the liberality which the operators have displayed in the Morse testimonial.

Outside of the W. U. Co. I do not know of a single man who has subscribed to the testimonial; and, in fact, the Franklin operators were entirely slighted, their cooperation not even being asked by the Executive Committee here.

It may be well to state that the object of your correspondent is to show that there are many things yet to be corrected to make telegraphing what it ought to be, and that any wrongs will be made public without fear or favor. In connection with this it may be stated that there is a bad practice prevalent of allowing beginners the privilege of main circuits, and to send and receive messages before they are competent. In my experience there has been more errors and trouble caused by this habit than any other cause. In the absence of operators learners should be kept away from the wires, and, when they are allowed to use a circuit, they should be watched by a competent person, to prevent mistakes.

In conversation with some of the Banker and Broker cooperatives we endeavored to ascertain the state of affairs with them under the new plan, but they are not disposed to tell anything more than that, so far, it is a success. They complain, however, that the promised monthly statement has not as yet been received for any one month since the arrangement went into effect, and

hence they are in the dark as to the exact result financially. Would it not be well for the superintendent or auditor to inform the employees just how the business has turned out? It would be very encouraging, and they seem anxious to know the facts.

Loud calls are being made for a settlement with the treasurer of the strikers here, who claims to have vouchers to cover the amount of funds in his possession, but as yet they have not been forthcoming.

The settlement of the affairs of this District of the N. T. U. seems to be making but little progress. The committee chosen for that purpose seem to be divided as to which of the two propositions submitted to the vote of the members has been carried. Of the three members of the committee one has withdrawn, and the other two are unable to agree as to what disposition of the funds has received a majority of the votes. It is evident that a new vote will have to be taken to decide the matter.

PERDU.

To Correspondents.

AN UNBIASED OPERATOR.—Your communication received too late for publication this week. Shall appear next week.

PERSONALS.

MR. J. F. CLEVERDON, of the Western Union Bridgeport, Conn., office, has gone to Halifax, N. S., on a two months' vacation.

MISS KATIE MURPHY, of West Cornwall, Conn., takes Mr. CLEVERDON'S place at Bridgeport, Conn., during his absence.

MR. J. E. HURLEY has resigned his position as operator in the Ottawa office of the Montreal Telegraph Company, and accepted a position as operator at Braeside, Ontario, same company.

MR. E. MILLER, late operator at Braeside, has accepted a position as operator at Holly, Mich., on Flint and Pere Marquette Railway.

MR. S. S. LAWS, the originator of the system of financial and commercial telegraph reporting, was on Tuesday last sworn in as an attorney and counsellor at law in the courts of this State.

MR. FRANK B. DOUTNEY, formerly of the Erie Railroad line in this city, has accepted a position as operator on the line of the Chicago, Burlington and Quincy Railroad, at Sandwich, Ill.

MR. WM. HUBBARD, formerly at South Pass, Illinois, has taken a situation as operator at Greeley Station, Colorado Territory, on the Union Pacific Railroad.

LAWRENCE MCPARLIN, Jr., formerly of Lockport, N. Y., has accepted a position as chief operator of the A. & P. office at Buffalo, N. Y.

THE TELEGRAPH.

Official Statement, Western Union Telegraph Co.

	April, 1869.	April, 1870.
Receipts.....	\$602,827 30	\$678,378 75
Expenses.....	383,844 17	400,486 75
Net Profits.....	\$218,983 13	\$177,892 01

(By Cable.)

A NEW SUBMARINE CABLE.

MADRID, June 2d.—A concession has been granted for laying a telegraphic cable between some point on the English coast and the port of Corunna, Spain.

REDUCTION OF CABLE TOLLS.

LONDON, June 3d.—A material reduction has been made on the tolls on cable messages between England and India, via Gibraltar and Malta.

DESPATCHES TO AMERICA UNDER DIFFICULTIES.

LONDON, June 6th.—The Irish telegraph lines are not working well to-day. At present it is impossible to communicate with Valencia, the point where the land lines connect with the English cable. As a consequence, telegrams from English cities for the United States are going forward by the following somewhat circuitous route: By channel cable to Brest; thence by French cable to St. Pierre; thence by Newfoundland Company's cable to Sidney, C. B.; thence by Newfoundland land line to Port Hood, and thence by the Western Union lines to the various cities and towns in the United States and Canada. Notwithstanding this unusual route there is no apparent delay in the transmission of messages. The working of the lines in this way demonstrates the wisdom and practical value of the joint-purse arrangement made by the English and French cable companies some time since.

In the absence of some such arrangement America would not be in telegraphic communication with Europe to-day, because the lines of both companies are disordered. The English line is crippled from Valentia, east, and the French line from St. Pierre, west: but by jumping from one cable to the other, as it were, in mid ocean, complete telegraphic communication is restored.

CABLE ACCIDENT.

LONDON, June 6th.—The telegraph cable which crosses St. George's Channel to Wexford is broken, and communication with the Irish wires, which connect with the Atlantic cable, is suspended.

TELEGRAPH INTERRUPTION.

LONDON, June 7th.—The news is meagre to-day. The telegraph lines are still deranged in some directions, and particularly in Ireland. Despatches to and from that island are somewhat delayed.

CONTINUED TELEGRAPHIC DERANGEMENT.

LONDON, June 8th.—The telegraph service of the kingdom is still deranged.

The West India and Panama Telegraph.

A KINGSTON, Jamaica, correspondent of the *New York Herald* writes, under date of May 20th, that "the West India Telegraph Company have taken the premises of the Jamaica Bank for their head office in the West Indies. The cables will be landed at Holland Bay, and then connected with their land lines, terminating at the Company's office.

"Twelve operators arrived to-day in the Shannon, from Southampton, for distribution among the cable offices. Another detachment is to arrive, per Elbe, on the 5th proximo."

Reported Loss of the Steamer Dacia, of the West India and Panama Telegraph Expedition!

A HEARTLESS AND DIABOLICAL HOAX!

It was rumored here on Tuesday last that the steamer Dacia, of the West India and Panama Telegraph Expedition, had been lost with nearly all on board. In the afternoon of Wednesday the papers connected with the American Press Association published the following despatch:

"LONDON, June 8—4 P. M.

"The particulars have just been received of a dreadful disaster off the Island of Bermuda. The steamer Dacia, of the Central American Telegraph Corps, engaged in laying the new cable between the West India Islands and the Isthmus of Panama, struck a reef off the Island of Bermuda, and was totally wrecked. Of the crew and the Telegraph Construction Corps fifty-seven persons were drowned, and but three lives were saved, those rescued being in an exhausted condition.

The report was at once discredited by Gen. W. F. SMITH, the President of the International Ocean Telegraph Company, and who has been the leading party in the new enterprise, and his associates here, and investigations were at once set on foot to trace the report to its source. It has been ascertained that a despatch was left at the Western Union Telegraph office at Baltimore, Md., at nine P. M. of Monday, the 6th inst., addressed to LLOYDS, London, and signed by M. BUTTERFIELD, the LLOYD's agent at Bermuda, communicating the above information. The person who left it was a dark, sunburnt, thick set individual, and upon the receiving clerk, as usual, asking for his address, said he was not Mr. BUTTERFIELD but was sending the despatch for him; that Mr. B. had just arrived from Bermuda, and that both were stopping at BARNUM'S Hotel. A subsequent examination of the hotel register failed to discover Mr. BUTTERFIELD or his pretended representative. The names of two arrivals from England were registered on that day, but neither answered to the description of the person who filed the bogus message.

It has also been ascertained that there had been no arrivals from Bermuda. The latest advices from there were of May 28th, by the Fah Kee, and no wrecks were then reported. Besides, unless far out of her course, the Dacia would not be within a thousand miles of Bermuda.

This despatch was of course made public in London by LLOYDS, and returned by cable to this country, as above stated.

The whole affair is doubtless a shrewdly conceived and well executed plot to depress the stock of the company in the interest of certain parties, and is an exhibition of diabolical heartlessness not often realized.

Every effort is being made to discover, expose and punish, not only the immediate perpetrator of this rascally operation, but his infamous associates, by whom the thing was contrived, and who hoped to profit by the scoundrelism.

The following despatch was sent by Gen. SMITH Wednesday evening:

"NEW YORK, June, 8th.

"GRAY, 100 Cannon st., London:

"Rest easy; the Dacia report is false. Beautiful game. You know your enemies. W. F. SMITH."

Signs of Progress.

OUR readers will recollect that, from time to time, we have advocated the consolidation of the different telegraph companies and lines outside of the Western Union Company under one management, as the only way in which they could hope to successfully compete with the latter company. It gives us much pleasure to record the fact that our counsel and advice in this matter at length seem likely to be heeded.

At the recent election of directors of the Franklin Telegraph Company, at Boston, a majority of the new board chosen are also directors of the Atlantic and Pacific Telegraph Company, and of the Union and Central Pacific Railroads, with whom arrangements for working a through line to California have been made. This result was not generally anticipated in telegraphic circles, and it was immediately concluded that it meant consolidation. It is probable, and in fact almost a certainty, that it will in due time lead to a practical alliance of all the principal competing telegraph companies, but the matter has not yet proceeded as far as our enterprising daily contemporaries announce. There has not been as yet any consolidation of the companies mentioned, even, and although a plan for future operations has been blocked out, and to some extent discussed, no definite decision has yet been reached. What the terms of this proposed alliance, if effected, may be, it would be premature as yet to announce. In fact, any such announcement at this time is merely speculative and unreliable.

We are assured, however, that the parties having this matter in charge are men of great business experience and talent, of broad and liberal views, and that as soon as conflicting interests can be harmonized we are to have a strong and reliable organization, which shall be able to supply needed telegraphic facilities to the whole country, in place of the dozen, more or less, comparatively small, and for the most part pecuniarily embarrassed concerns, which maintain a suicidal competition not only with the Western Union Company but also to a considerable extent with each other.

We are satisfied that this movement is an important sign of progress in the right direction, and believe that common sense and good business management is soon to supersede the futile and impotent policy which has for some years past characterized telegraphic competition in this country.

The Morse Testimonial.

WE learn that the proposed testimonial from the telegraph employes, past and present, to Prof. S. F. B. MORSE, in recognition of his discoveries and services in telegraphic science, is making good progress. It has not yet been determined what shape the testimonial will take, and it will depend very much upon the amount of money collected. Correspondents of THE TELEGRAPHER having criticised the exclusive character given to the affair, in confining it to the Western Union employes, and there

having been a general desire expressed that all telegraphers, past and present, should unite in it, Mr. J. D. REID, the chairman and treasurer, announces that an invitation is extended to all telegraphers, without reference to their present location or employment, to participate. In response, also, to the suggestions of our correspondents, the names of Mr. DAVID MCCARGO, General Superintendent of the P. and A. Telegraph Company; Mr. H. H. WARD, Superintendent of the Anglo-American Telegraph Company at New York, and of the Editor of THE TELEGRAPHER, are nominated in the last number of the *Journal* as additional committees, and more will be announced soon. Mr. REID has very generously taken the lead in this enterprise, and subscribers can have no question but that in his hands the funds will be sacred, and honestly and properly applied. We hope that all jealousy will be laid aside in this matter, and that the testimonial may be one which shall reflect honor not only upon Prof. MORSE but also upon the telegraphers of this country. We have no doubt but that it will be regarded by its recipient as the proudest of all the recognitions which he has received of his distinguished services to science and the interests of mankind.

Prof. MORSE will go down to posterity as the father of the American system of telegraphs, which has extended throughout the world—and his telegraphic children, already very numerous, are destined to rapidly increase as the years roll by. Let those of this generation, then, unite in this effort, and make it a fitting close to the long series of honors which have been conferred upon him.

The New Telegraph Route to the Pacific.

ARRANGEMENTS for business over the new telegraphic route to the Pacific, via the Atlantic and Pacific, the Great Western, and the Union and Central Pacific lines, have been completed, and it was opened to the public yesterday, the 10th inst. Great interest is felt in California at this, the first opposition to the monopoly of telegraphic facilities to the Pacific coast, so long enjoyed by the Western Union Company. The illiberal policy pursued by that company toward its customers on the Pacific coast has made most of those who are obliged to use the telegraph in that section inimical to it, and the new route will undoubtedly at once receive all the patronage which it can accommodate.

The people of California greatly rejoice at the prospect of relief from the tyranny of MUMFORD and GAMBLE, to which they have hitherto submitted, *perforce*, but not uncomplainingly. We hope that the new route will do the business confided to it so well as to ensure the permanent patronage of those who so willingly become its customers.

New Patents.

For the week ending May 31, and each bearing that date.

No. 103,555.—MODE OF FORMING INSULATORS. James M. Brookfield, Brooklyn, N. Y.

Claim.—1. The combination of divided die A, constructed internally as shown in fig. 3 of drawing, with a mandril, B, threaded on its lower end as described, so that the insulator will be threaded in its centre, while the divided die will allow of its removal, notwithstanding its irregular external form.

2. The combination of the divided die A, constructed internally as described, and the end threaded mandril B, with the follower F that presses upon the plastic glass and forms the bottom of the insulator, in the manner described.

No. 103,654.—APPARATUS FOR TEACHING STUDENTS THE USE OF TELEGRAPHIC INSTRUMENTS. Daniel W. Putt, Wellsville, Ohio, assignor to himself, Walter G. Brownson and Philip Brewer, same place.

Claim.—A telegraphic signal apparatus for students' use, operated by a telegraphic key of the ordinary form, and constructed and arranged substantially as herein set forth, to produce the telegraphic sound signals by mechanical appliances alone, without the use of electric batteries or magnets.

No. 103,768.—SECTOR ELECTRO-MAGNET. Henry M. Paine, Newark, N. J., assignor for one half to M. S. Frost, New York City.

Claim.—The construction of radial-limbed magnets, substantially as herein described.

No. 103,798.—ELECTRO-MAGNETIC ENGINE. Jacob Porter Tirrell, Charlestown, assignor to Henry A. Clark, Boston, Mass.

Claim.—1. The sets of magnets placed on an inclination, so that their inner ends are in line parallel to the radii of circles described by the armatures in turning on the axis, substantially as described.

2. The double cranks, in combination with the armatures D D', oscillating in the spaces formed by the series of magnets, substantially as and for the purpose described.



SATURDAY, JUNE 11, 1870.

J. N. ASHLEY.....Publisher and Editor.

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TELEGRAPHIC "CROAKERS," AND WHY THEY
CROAK.

THE Western Union Telegraph Company have published the result of some tests which have recently been made of their wires south of Washington, and we are given to understand that this exhibit is made for the benefit of certain "croakers." Inasmuch as THE TELEGRAPHER and its contributors have occasionally ventured to criticise the working condition of that company's lines, we cannot shake off a haunting suspicion that this dismal epithet refers in some manner to ourselves. Since the publication referred to a correspondent in Washington has propounded to us a series of conundrums. Among other things this impertinent investigator wants to know why the wires were tested *after* twenty-four hours' rain instead of during its continuance, and whether still better results could not have been obtained by not testing till some time after the rain—say a week? He also wants to know why the results of the tests made at the same time of the wires running northward from Washington were not published also, for the sake of comparison? Finally, our friend desires to know if the mode of testing adopted, as explained by the editor of the official journal, isn't somewhat liable to give erroneous results?

As far as the first two questions are concerned we frankly confess that we give it up! On the last head we trust we may be permitted to indulge in one or two remarks without being mistaken by our editorial brother for one of the melodious denizens of the swamp. Here is his explanation, which we presume is "official."

"The galvanometer is applied to a very carefully made insulator, designed as a standard. The pointer is at 100. Now, if another insulator is put under the like test, and the pointer turns to 125, 150 or 200, these figures demonstrate the superiority of the latter."

As the deflection of a galvanometer increases in proportion to the amount of current passing through it, the inference is unavoidable that the greater the deflection of the galvanometer the more current passes through the insulators, and *therefore* the better they are!

We have wondered for a good while why the Western Union Company employed the style of insulation that they do, but the mystery is now solved. The escape is made as large as possible, in order to get a big deflection on the galvanometer, so that the insulators will test high!

Not long ago our editorial brother indulged in a trip to Boston, and made a careful examination of the telegraph lines which form the highway of thought between the metropolis and the modern Athens. He couldn't find a flaw anywhere. The poles "stuck up with conscious completeness," the wires were strung with "irritating precision." It was, indeed, a line of telegraph "against which a green-eyed editor (again that horrible suspicion!) could not wag his tongue!"

Now, we too have been looking out of the car windows

on our recent travels, and we can truthfully say that, to the mechanical eye, the Western Union lines fully justify our worthy brother's enthusiastic exclamations. One may pass over the main route from Boston to Washington, and in all that distance, ninety-nine chances out of a hundred, he shall not see a pole out of the perpendicular, not a single insulator broken or missing, and not a wire hanging two inches out of its true curve. We would not detract one iota from the credit justly due to such an admirable and perfect system of inspection and repairs as is manifest from the condition of these lines. The Western Union directors have not been niggardly in the appropriation of money for the construction and maintenance of their lines; but, when the whole theory of construction and insulation is radically defective and wrong, of what practical benefit, comparatively speaking, is the perfection of the merely mechanical details of the structure? And this is what we assert in regard to the Western Union lines; and when we say this, we desire to include in the same category the Atlantic and Pacific, the Pacific and Atlantic, the Franklin, and the other competing lines now in operation.

We have addressed our remarks to the Western Union, because it is the principal company in the United States, and it is therefore manifestly proper that, having the means and the ability to make a reformation in these matters, it should set the example. It is idle to waste words upon the competing lines. They have neither the disposition nor the financial ability to do anything more than to blindly and imperfectly follow in the wake of the Western Union.

The crying evil of the American telegraphic system is its insulation. The system employed on the main routes of the Western Union Company, and by the other competing companies, is not one single step in advance of that in vogue twenty years ago! After the experience of a quarter of a century of the inevitable and insurmountable defects of the glass insulator, the old foggy managers of the different companies, whose telegraphic education was completed a score of years since, and who, like the Bourbons, "never learn anything and never forget anything," cling to it with the desperation of a drowning man. A few moments' candid consideration of the matter will show that a satisfactory insulation can never by any possibility be obtained in rainy weather by the use of the glass insulator.

According to the *Journal of the Telegraph* Mr. MOSES G. FARMER "is one of the best known practical telegraph and electric workers—a man thoroughly honest and in earnest, who has given these last twenty-five years and more to the patient, careful and thorough examination of not only electric science, but of the means by which that science can subserve, in the best way and widest extent, the public necessities." Here is what Mr. FARMER says about glass insulators:

"A common glass and bracket insulator, in average condition upon a line will, in clear, cold, frosty weather, offer perhaps 10,000 megohms resistance, more or less; but during a long continued rain this high degree of resistance falls—sometimes as low as nine or ten megohms, and often lower—even below one megohm, but then it quickly regains a portion of its insulating power as soon as the surface becomes dry. I presume, from long experience and many careful tests made in the worst weather, that nine megohms will be *above the average value* of three quarters of the insulators used in the Middle and Northern States, in long continued heavy storms."

The English minimum standard of insulation (one megohm per mile) is as low as will admit of satisfactory working in a circuit of 250 miles. But, as they use but twenty poles to the mile while we use about forty, our insulators must be about twice as good as theirs to reach this standard—that is to say, we must reach an average of forty megohms per insulator—which is more than four times as great as the average result now attained, according to Mr. FARMER, whose results differ but very little from those obtained by several other experimenters of our acquaintance. Well might Mr. C. F. VABLEY say, after a series of careful tests of the Western Union lines, "It

is only the favorable climate that permits such insulators to pay any dividends."

Under the blundering mismanagement which has characterized the engineering department of at least the Eastern Division, a great portion of the money expended for construction and repairs might as well have been thrown into the sea, as far as any benefit to the working of the line is concerned. We believe the directors have appropriated a sufficient amount of money, and have honestly endeavored to secure the building of first class lines, but unless some competent electrician is allowed to direct the expenditure the benefits realized will be very small, and so will the dividends.

We have heard it suggested that the Western Union Company, having made up their minds that the lines will pass into the hands of the Government within two or three years, are not therefore anxious to expend any more money for improvements than is actually necessary. There is no evidence, however, that such is their policy, and in any event it would hardly be a wise one, for it might get them into the same dilemma as that experienced by a well known contractor, of whom the story is told that he agreed to put up a line for certain parties, who were unusually particular, and stipulated for a certain standard of conductivity and insulation. The contractor found that, theoretically, a certain sized wire ought to give the required result, and so put it up, but the wire was not of the best quality. Upon measurement the conductivity was found to be below par, and the work, consequently, was not accepted. The contractor observed to a sympathizing friend that "the trouble was all on account of those d—d ohms," and if it wasn't for them the line was well enough." Similarly, the Government will probably purchase the lines on a basis of ohms, if at all.

We are glad to see it officially announced that Mr. GEORGE B. PRESCOTT has recently been appointed electrician to the company. He is a gentleman whose ideas on the subject of that bane of American telegraphy, glass insulation, agree exactly with our own. In his widely circulated work on the telegraph Mr. PRESCOTT forcibly and truly remarks:

"Science and experience have been teaching us, ever since the first rod of telegraph wire has been in operation, that we should not rely upon glass as an insulator—yet it has been almost universally used in this country. Every one has observed that whenever the weather is wet or foggy every article of glass is covered with a thin film of water; and, of course, each insulator on a line of telegraph is so covered with moisture. Certainly, some electricity will escape over each glass insulator so covered; in fact, glass becomes a conductor as soon as it is exposed to humidity; it attracts to its surface the aqueous vapors of the atmosphere; they form there a thin film of water, by which the electricity passes away. When we reflect that upon a line of telegraph five hundred miles in length there are fifteen thousand such imperfect insulators to conduct the fluid from the wire, we are at no loss to account for the dissipation of all, or nearly all the galvanism generated by the battery, and the consequent bad working of the line."

Ten years of experience, since the above paragraph was written, has but confirmed and strengthened the truth of Mr. PRESCOTT's views. We fully concur with him when he remarks, in a subsequent paragraph: "Our present system of insulation is a positive disgrace to the scientific ability of our American Telegraphic Engineers"—except that for engineers it would be more correct to read "General Superintendents." We have plenty of educated and scientific engineers, who will contract to take charge of lines and keep them up to any standard of insulation practically required, but their services are never called into requisition.

As the only apparent object of the Western Union Company in appointing an electrician is to have these important questions decided in accordance with the dictates of science and common sense, we trust that the stockholders may reasonably look for some improvement in the future. Mr. PRESCOTT need not look far to find insulators that will go a long way above the not excessively high standard of the English lines.

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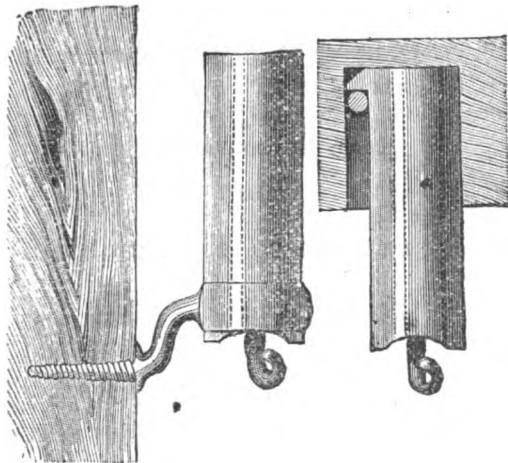
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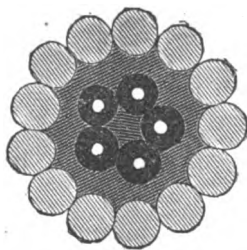
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offer for sale, as TELEGRAPH and ELECTRIC CONDUCTORS, Wires protected by the BEST INSULATOR and STRONGEST RESISTANT TO CHEMICAL ACTION and ATMOSPHERIC INFLUENCE.

After the experience of several years in the use of KERITE for purposes of insulation, we have concluded to adopt it as the very best substance for wire covering, not only for use of offices but for SUBTERRANEAN, SUBMARINE and AERIAL LINES. We have used it unprotected for years under ground, and exposed to the most injurious atmospheric influences—to heat, cold and moisture—and have yet to learn its failure, when other ordinary insulating substances would have been rapidly destroyed. UNDER WATER it has retained an electrical charge for many hours, thus ranking it in the HIGHEST GRADE of NON-CONDUCTORS.

We have, therefore, made arrangements not only to secure THE EXCLUSIVE AGENCY for its sale, for the purposes for which we have already sold it so largely, but to furnish complete

IRON-CLAD CABLES,

of the usual size, with KERITE COVER, believing that it will exceed, in insulation for submarine purposes, ANYTHING HITHERTO MANUFACTURED.

We shall be happy to furnish estimates for any amount and size of cable, which will be found to compete with any other construction, both in quality and price.

In corroboration of our statements we append extracts from reports of those who have exposed it to the severest practical tests.

From Prof. SILLIMAN, of Yale College, Nov. 10, 1868.

"I am satisfied, as the result of my own researches, that ozone is by far the most fatal of atmospheric influences. I have submitted portions of KERITE to the action of a highly ozonized air for a sufficient length of time to prove them, and at the same time have exposed the best English Gutta-Percha Covered Cable to the same tests, with the following result: After long experience KERITE resists perfectly! The best English Gutta-Percha Cable was speedily destroyed. A few days' exposure to ozone would produce more effect than many years in a normal atmosphere, exposed to carbonic disulphide, nitric acid, sulphuric acid, sulphuric dioxide, nitric peroxide, chlorine gas and alkaline hydrates. Gutta-Percha is immediately dissolved in carbonic disulphide, and powerfully acted upon by alkaline hydrates. Some samples of KERITE resist the action of the former in a surprising manner, and are completely unaffected by the latter."

"New York, May 14, 1870.

"In nearly two years since the foregoing was written I have made a considerable number of experiments upon the KERITE Compound of A. G. DAY, all of which tend to confirm former results; while the practical test of the continued use of electrical conductors covered with it, and the growing favor with which they are received by electricians, offers the best guarantee of its permanent value."

"B. SILLIMAN."

From MOSES G. FARMER, of Boston, Mass.

"I have tested 195 feet of this wire, and found it a better insulator than Gutta-Percha."

"The instrument used would have shown a current through 300,000 miles of Telegraph wire. The 195 feet showed no leakage in water. The KERITE insulated wire withstands atmospheric agencies wonderfully, and will last for years when exposed to the atmosphere; likewise, when buried in the earth, there is no reason to apprehend decay. It is a well known fact that Gutta-Percha deteriorates very rapidly when exposed to atmospheric influences, and therefore cannot be advantageously used for the covering of wire for out-door exposure unless buried in permanent moisture."

From Mr. E. A. CALAHAN, Supt. Gold and Stock Telegraph Co., May 14, 1870.

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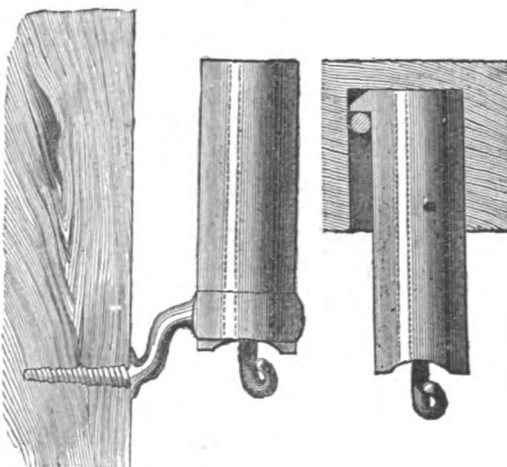
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It has been the custom of the present publisher and editor of

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to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to

INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES AND INJUSTICE practised by them upon its employees, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

The President of that Company, however, distinctly disavows this action, and says, in a communication to the editor of THE TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S) 'discontinuance and discountenance' a test of competency for our service."

It remains to be seen whether the Practical Telegraphers of this country CAN BE RELIED UPON to stand by those who seek to secure to them JUSTICE AND FAIR TREATMENT.

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For THREE SUBSCRIBERS, F. L. POPE'S "Modern Practice of the Electric Telegraph."

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DR. L. BRADLEY,

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Keeps constantly on hand and for sale his

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Having adopted the use of

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which is much RICHER and FINER than brass, he now presents his work in a style and of a quality that are unsurpassed.

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FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionally stronger magnet, while the resistance will be the same.

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All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1.25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package.

He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

THE TELEGRAPHER.

JOURNAL OF ELECTRICAL PROGRESS.

Vol. VI.—No. 43.

New York, Saturday, June 18, 1870.

Whole No. 205.

ELECTRICAL PHENOMENA AND THEORIES.

PROF. TYNDALL'S third lecture at the Royal Institution, London, on "Electrical Phenomena and Theories," was on frictional electricity, and not especially interesting to telegraphers. On Thursday, May 19th, he delivered the fourth lecture of the series.

In this lecture he reviewed the origin and progress of the electric telegraph, and spoke of the electrical phenomena presented in the transmission of galvanic currents through submarine cables. He pointed out that every submarine cable is, in point of fact, a Leyden jar, which is charged every time a current is sent into it, and the longer the cable the slower is the rate at which it can be charged and discharged, consequently the lower is the speed of signalling through it. By means of most elaborate and expensive apparatus the speed at which messages can be sent through the last Atlantic cable laid between England and America is only fourteen words a minute, and through the longer French Atlantic cable the speed is much slower. The copper conducting wire forms the inside and the sea water the outside coating of the long Leyden jar represented by every submarine cable. Sir Humphrey Davy showed in 1808 that a Leyden battery could be charged with voltaic electricity. An enormous battery was made at the Royal Institution, by subscription, and it consisted of 200 instruments, connected together in regular order, each composed of 10 double plates arranged in cells of porcelain, and containing in each plate 32 square inches, so that the whole number of double plates was 2,000, and the whole surface 128,000 square inches. This battery, when the cells were filled with 60 parts of water, mixed with one part of nitric acid and one part of sulphuric acid, afforded a series of brilliant and impressive effects. When pieces of charcoal about an inch long and one sixth of an inch diameter were brought near each other—within one thirtieth or one fortieth part of an inch—a bright spark was produced, and more than half the volume of the charcoal became ignited to whiteness, and by withdrawing the points from each other a constant discharge took place through the heated air, in a space equal to at least four inches, producing a most brilliant ascending arch of light, broad and conical in form in the middle. When any substance was introduced into this arch it instantly became ignited; platinum melted as readily in it as wax in the flame of a common candle, quartz, magnesia, the sapphire, lime, all entered into fusion, fragments of diamond and points of charcoal and plumbago rapidly disappeared and seemed to evaporate in it, even when the connection was made in a receiver exhausted by the air pump, but there was no evidence of their having previously undergone fusion. When the two conductors from the ends of the combination were connected with a Leyden battery, one with the internal, the other with the external coating, the battery instantly became charged, and on removing the wires and making the proper connections either a shock or a spark could be perceived; and the least possible time of contact was sufficient to renew the charge to its full intensity. In later times Mr. J. P. Gassiot made a battery of 4,000 cells, and the sparks from it would leap across a space of about one thousandth of an inch without previous contact of the two terminals. Professor Tyndall exhibited some experiments with a large electrical machine, which Mr. Varley had made for him with great care. He then exhibited some novel apparatus, invented by Mr. C. F. Varley, C. E., which consists of fifty large tin foil condensers. On rotating a handle these are first charged like one large Leyden jar and subsequently joined "in cascade." Mr. Varley's large Daniell battery of 1,000 cells was used for charging it. This battery has power only to leap across an interval of one five hundredth part of an inch. On rotating the handle of the fifty condenser machine the charged condensers are removed from the bat-

tery and connected "in cascade," and a loud brilliant spark, from two to four inches in length, is the result. In this way the complete identity of galvanic electricity and lightning was established. Another experiment was performed with the great battery and the condensers of Mr. Varley's artificial cable. In these condensers there were 12,000 square feet of surface. Two striking points were here shown; first, this enormous surface required half a minute to charge; secondly, when they were discharged through platinum wires the wires melted away into block platinum steam, attended with a brilliant flash and a sharp report. By means of the discharge holes were burst through tin foil; when the discharge was passed through a platinum wire immersed in a tumbler of water the concussion smashed the glass into fragments. Professor Tyndall explained the precautions necessary to be used in handling the accumulation of force, and said there was power enough stored up to kill twenty men. Having shown by these means that time is a most essential element in these matters—a fact pointed out by Faraday in 1830, but unheeded until submarine telegraphy forcibly drew attention to the fact that a very serious time is necessary to charge long cables like that across the Atlantic—he illustrated this important fact by means of Mr. C. F. Varley's artificial cable, which represents in all electrical respects a cable 14,000 miles in length, with ten intermediate stations. At each of these a reflecting galvanometer was inserted; the lime light was used, and ten brilliant little spots in a vertical line were reflected upon the screen, so as to be seen by everybody present. On connecting the battery at the English end of this artificial cable, which electrically represented a line from England to Australia, about half a second elapsed before the spot representing Gibraltar showed any sensible trace of current; a little later, Malta, then Suez, Aden, Bombay, Calcutta, Rangoon, Singapore, Java, and lastly Australia showed the electric current. It was twenty-four seconds before Australia sensibly responded to the impulse from England. The idea of infinite speed, so common with regard to electricity, was dispelled by these experiments. After illustrating in various ways the ingenious contrivances of Mr. Varley and Professor Thomson for expediting the electric signals, and by which they had increased the message carrying power of the Atlantic cables sixteen fold, the lecturer acknowledged in grateful terms his indebtedness to Mr. C. F. Varley for his apparatus and assistance.—*Mechanics' Magazine*.

[From the *American Gas-Light Journal and Chemical Repertory*.

Freaks of Lightning with Gas.

ZANESVILLE, O., May 7th, 1870.

Messrs. Editors: In reading the discussion on lightning rods now going on in your journal between Drs. Bushee and Van der Weyde, I was reminded of an accident that occurred here, in the Western Union Telegraph office, in the summer of 1868, and at a time, too, when the operator did not think it necessary to cut off his connection by the ground wire, which is generally done by hooking to the gas pipe or burner. There were some eight wires entering the office, all connecting with the switch board, which was on the front wall, directly over the operating bench, and between two windows. On the right, some six feet, and four feet back, was another operating bench, and some three feet above this was a gas bracket, the pipe of which leads to the meter in the side hall and near the front window. The electric fluid came in on the wire, melted the connection with the magnet, passed some six feet to the gas bracket and through the pipe to the meter, melting a three-eighth inch lead pipe, setting the gas on fire, which blazed up some three feet, and in all probability would have destroyed the building had it not been seen through the window by persons in the street, who gave the alarm. The operator did not know that any

accident had occurred, except the little damage done to his magnet. The above fact will give some idea of what might happen in connecting lightning rods with gas pipes.

Respectfully yours, A. C. ROSS.

[The phenomena involved in this incident are entirely novel to us, and will doubtless be so to the majority of our readers. To telegraph operators this little history will convey a lesson of caution in the management of their wires during electrical storms.—*Eds.*]

Testing the Strength of Electrical Currents.

THE most correct way of ascertaining the strength of an electrical current—and, as a consequence, the strength of a galvanic battery of intensity—is by the decomposition of water in a chemical electrometer. This consists of a glass tumbler, having a cover of wood, and openings in it for a large conductor of copper descending at each side, forming, as it were, two arms, which are brought near one another in the centre and not far from the bottom of the tumbler, which contains water. The terminals—*alias* poles *alias* electrodes—of platinum are formed to be the seat of a small glass tube, having a bell mouth at the bottom but closed at the top. This tube is a gauge, and has a vertical scale of figures marked on it. It is filled with water, then placed in the tumbler over the electrodes and under the surface of the water in the tumbler, to exclude all the air. The full column of water is now supported in this little tube, and it becomes an electrical gauge. The wires of the battery forming it (maybe those of a telegraph line) are now connected with the copper wires in the tumbler, and the decomposition of the water immediately takes place. The two gases, hydrogen and oxygen, of which water is composed, are now seen to rise up in bubbles from the platinum poles and ascend in a whirling current to the top of the tube. As these gases ascend they gradually displace the water in the tube and force it down into the tumbler. The scale on the tube shows the gradual displacement of the water, and the amount of gas made in a given time, and this indicates the decomposing power of the electric current.

Another method of testing the strength of the electric current is with a galvanic meter, which consists of a band of fine insulated wire surrounding a vibrating magnet. When the current is transmitted through the wire it deflects and moves the needle, and its deflection is measured by a scale on the circle.—*The Scientific Journal*.

The Physiological Effect of the Ruhmkorff Spark.

It has been taken for granted that to allow the spark of a large Ruhmkorff coil to pass through the body would be dangerous, if not fatal; but recent experiments by Dr. Richardson, in England, have proved that this is an error. Our readers have heard of the immense Ruhmkorff coil at the "Royal Polytechnic," in London, which gives a spark of 25 or 28 inches. Dr. R. sent the charge of this powerful machine through a pigeon, which had previously been put under the influence of anaesthetics. Each spark caused a general muscular contraction, but the action of the heart and of the respiratory organs was not affected, and the bird came out of the experiment unharmed, except for the ruffling of its feathers. A frog was then subjected to a similar trial, with a like result. To one who has witnessed the action of this monster coil, which in its luminous and calorific effects as far exceeds an ordinary induction coil as the latter surpasses a common Leyden jar, this seems scarcely credible. Whether the experimenter allowed the spark to pass through any part of his own person, after trying it on the pigeon and the frog, is not stated in the only account of the investigation that we have seen; but, if they could stand it, there could be no serious risk in a man's taking a similar dose of artificial lightning.—*Boston Journal of Chemistry*.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., June 15th.

TO THE EDITOR OF THE TELEGRAPHER.

IN the Senate, on Monday last, Mr. Pomeroy, of Kansas, offered a resolution, which was adopted, directing the Attorney-General to examine into the charges made by the International Ocean Telegraph Company (Cuba cable) upon messages passed over their lines, and to report to the Senate if they are in excess of the rates allowed by the Act of Congress approved May 5th, 1866.

The only other Congressional action since my last has been another hearing before the Senate Committee on Foreign Relations of Mr. Cyrus W. Field upon his proposed Pacific Cable, and of an advocate of the Belgium Cable project.

The members of Congress take no interest in, and are not likely to take any action on any telegraphic matters during the remainder of the session. Only a month of the present session remains, and it will require the utmost diligence on the part of both Houses to enable them to get through the legislation actually necessary before the adjournment. The weather is very warm, both the Senate and Representative Chambers are badly ventilated, and members of Congress, reporters and letter writers are anxious to get away.

Your correspondent, "Perdu," keeps your readers so well posted in regard to ordinary telegraphic matters at the capitol as to leave no excuse for my boring them with other than Congressional affairs. CAPITOL.

The Yontz Monument Fund.

SAN FRANCISCO, June 6th.

TO THE EDITOR OF THE TELEGRAPHER.

IN your issue of May 28th we observe an article from this city, over the signature of "Ixion," in which reference is made to the "Yontz Monument Fund," and in which Messrs. Ladd & Jaynes are asked to explain what disposition has been made of the funds contributed. For the information of interested parties, and to relieve those gentlemen from the malicious imputation cast upon them by an anonymous correspondent, we beg to submit the following facts:

On September 17, 1869, at an informal meeting of telegraphers in the San Francisco office, we were appointed a committee to draw up an address to our brethren on this coast, asking them to contribute toward a monument fund.

We were further authorized to collect contributions and disburse them for the purposes specified in the address. We have received subscriptions up to within a few weeks past, and the entire amount now in our hands is \$300.

It was intended to proceed immediately to the erection of a monument and the improvement of the grounds, but at this juncture the committee were informed that the family of the late Mr. Yontz proposed to remove his remains to their own lot, and action was temporarily suspended pending their final decision. It is expected that they will be induced to alter their expressed intention, and permit the committee to carry out the wishes of the subscribers.

Messrs. Ladd & Jaynes had no connection with this matter, further than to cash orders for employees who could not otherwise conveniently remit personally, to contribute money, and by every means in their power to assist this committee. Not a dollar of the fund is, or ever has been deposited with them, nor have they any control of the same; their names do not appear, except as subscribers, and they are in nowise responsible for the funds, or for the action of this committee.

JAMES S. URQUHART,
J. W. BROWN,
C. P. HOAG.

A New Name for an Old Trouble.

OTTUMWA, IOWA, June 9th.

TO THE EDITOR OF THE TELEGRAPHER.

AS good a thing as I have heard for some time happened on this line to-day. An operator who is called first class asked our train despatcher at C— if the two wires were not connected, as his (C's) writing came to him on both instruments. As near as I can figure this it must be a new name for a cross. What is your opinion?

QUILL.

Dissatisfaction of Operators.—Another Organization Needed.

PITTSBURG, May 30.

TO THE EDITOR OF THE TELEGRAPHER.

THERE is a great deal of discontent brewing here in the big telegraphic wigwam—while the Pacific and Atlantic employees are also dissatisfied, because a new man from St. Louis is brought here and put over the heads of others who have worked in the office since it was opened, which is regarded as a matter of favoritism.

In the Western Union office the rule of red tape is more complete than ever. Nothing can be done there without an exceedingly liberal supply of it. Since the unfortunate termination of the strike the operators in the Central Division are regarded as so many paupers, who cannot get a living outside of telegraphing. Are we to submit to be thus regarded always, and are we always to submit to such humiliating conditions? Are we never to have another Telegraphers' Association? Learning wisdom from the past we should organize anew, stronger and better than ever before. I, for one, am for a Protective League; but if this is not now deemed advisable, let us organize for mutual benefit and support. Many telegraphers, while ostensibly accepting the position as it is, are in their hearts longing for an organization that shall afford them a chance for freedom and independence once more.

"Backward, turn backward, oh strikers, in your flight!
Make us a League again, just for one night."

In this matter of oppression of operators I do not expect either company. Both need the salutary influence, in addition to that of THE TELEGRAPHER, of a strong organization of the telegraphic fraternity. A. Q.

A Scathing Review of J. Newton Crittenton's Defence of Chicago Officials.

CHICAGO, ILL., May 26.

TO THE EDITOR OF THE TELEGRAPHER.

IN THE TELEGRAPHER of May 14th one J. Newton Crittenton comes out in a card in defence of his "Superior officers," taking exceptions to some remarks made by "Operator" in a previous issue. Surely this is "a Daniel come to judgment." The advice he gives is excellent, but unfortunately for him, "actions speak louder than words." It would have been in better taste had some other person been deputed to vindicate the good name of the officers of the W. U. Co. They all need vindicating, from our general down to the ex-manager of "Yd" office. Still no one will question J. Newton Crittenton's right to defend them, "even at the risk of incurring their disapproval." Don't that strike you as being decidedly funny? Yet there is some excuse for him in the fact that he was one of the few who broke their promise to the operators, and so was not compelled to listen to the colonel's harangue, delivered to each and every one of us in his private office. Those of us who had that pleasure remember that one of the principal points urged against us was that none of us had the manliness to refute the unmerited accusations made against him by "Chicago operators." We all remember how the colonel "harped" on this point, declaring that previous to the appearance of those "damnable articles" he, in his most sober and solemn moments fondly imagined he had many friends among the operators of his district, but, alas! there were "none so poor as to do him reverence." You see what risk J. Newton takes. How pathetically he speaks of the general in connection with the "immortal Lincoln." Let us hope that great may be his reward. Who knows but what he may be returned to the stock yards?

On the morning of the strike several members of the League asked J. Newton C. to join with us but he refused, giving as a reason his conscientious (?) scruples against taking the oath, but promised them that in case of a strike he would go with the "boys." An hour later, when we left the office, he declined to go. Could he be expected to leave those under whose management were to be found "such experience, efficiency and executive ability?" Certainly not. His judicious though late appreciation of this fact has gained for him an advance of fifteen dollars per month. His eulogium of the general, whose chief merit, according to J. Newton C., is that he "was so intimately associated with the immortal Lincoln," will undoubtedly be rewarded some time in the future.

As a striking example of the remarkable "executive ability" in the Central Division, let me mention an incident that occurred in the spring of 1869. The Chicago Times, and prominent members of the Board of Trade, had publicly accused the Manager of the C. N. D. of using the news of the department for his personal advantage previous to his making the news public—in this case buying wheat on an advance in Liverpool. Mr. Rankin, Col. Wilson and Executive Ability, vide Stager, were cognizant of the facts. Ex. Ability, by virtue of his

proper rank, taking the case in hand himself, rushed around the B. O. T. (that's not an abbreviation for bottle; Ex. Ability never drinks) for a few days, and then interviewed the said manager. The result clearly proves Stager's unquestionable right to the title of Executive Ability, or Executive Stupidity. Some few operators prefer the latter. The manager proved beyond a doubt (?) that the wheat was bought for his brother-in-law, but on his verbal order. Was not the broker who bought the wheat very stupid to persist in saying, in the face of such indisputable proofs, that he bought the wheat "on shares?"

Would it not have been better had Col. W. been allowed to reconstruct this paragraph? "Often those who are the most traduced are the most willing to acknowledge their faults." Does he not imply that the colonel or our little general are willing to admit that they were at fault? If so, how can they have been traduced by the truth? Notwithstanding J. Newton Crittenton may receive THE TELEGRAPHER at Chicago office, I, in common with "operator," assert that Col. W. tried to compel every operator taken back to sign a paper to the effect that they would not take THE TELEGRAPHER or assist its circulation. It can't be "did," gentlemen; give it up, for as sure as the general is a little big man THE TELEGRAPHER is bound to stand, and be read, too, by W. U. operators.

ANOTHER OPERATOR.

A Telegrapher Can and Should be a Christian.

MONROE, Mich., June 4th.

TO THE EDITOR OF THE TELEGRAPHER.

IN answer to a query by "Christian," in TELEGRAPHER of May 28th, who asks, "Is it possible for an operator employed by the Western Union Telegraph Company to be truly religious?" I would say yes; I believe they can be true Christians if they earnestly seek to be, for in all conditions in life we are sometimes compelled to labor on the Sabbath, as in cases of sickness—and where is the man that would willingly give up his warm meals, that the cook might rest on that day? We read in the good book that our Saviour went about doing good on the Sabbath, and did He not allow His disciples to pluck the ears of corn and eat, although the Pharisees complained of their breaking the law? At another time He went into the Synagogue and restored the withered hand, saying, "Is it lawful on the Sabbath days to do good or to do evil—to save life or to destroy it?" But we read further that the Pharisees were filled with madness, and communed one with another what they might do with Jesus. I think they cared little for the keeping of the day, or the healing of the withered hand, but their hearts were filled with envy: there was one among them greater than they, and much rather would they have had the sick, and lame, and blind remain so, than have Jesus heal them. I sometimes think there are many Pharisees in our day, who care nothing for the breaking of the Sabbath, and perhaps, if at liberty, sin more in roaming about than they would if in the operating room all day. But the cry is against the Western Union Telegraph Company; they appear to censure the company more than the acts, for do not all telegraph companies, railroad, express, and publishers of daily papers keep some of their employees at labor on Sundays? Is it worse in the one than in the others? I think it more excusable in telegraph companies than in either of the others. Who demands this labor, is it the officials or the people? I believe it to be the people—yes, even Christians demand it. How great would be their censure if the telegraph company should fail to give them notice of the dying friend, whom they might possibly see if notified on the Sabbath, who otherwise they could never hear speak to again; how earnestly they would wish there was a train leaving, that they might go to that loved one; they would not hesitate for a moment, but would start one if it took fifty men to move it, had they the power.

Now, my dear brother or sister operator, "Christian," do not think I am defending the desecration of the Sabbath. No, that is far from my purpose. My sincere wish is that all could enjoy a day of rest to both soul and body, that they might one day out of every seven lay aside all the cares and perplexities of life, and allow the sweet influences of God's love to dwell in their hearts, to subdue all animosities. We should all do our duties far better, and should have time to look into our hearts, to see if we are free from the sins we condemn in others. Whether we profess to be Christians or not makes no difference; we all shall stand for ourselves and give an account of our individual deeds. The greater will be our sin if we do not strive to be Christians, and if in searching our hearts we are convinced that occasional compulsory labor on the Sabbath is not in accordance with what we believe to be Christianity, the greater our condemnation if we still persist in working for companies that require it of us, when the good Father above has spread out a beautiful world before us, wherein we can find a diversity

of employment. He has also placed us in a land of freedom, where we can choose our occupation, and also change it if we wish, for "the harvest truly is great, but the laborers are few." AN UNBIASED OPERATOR.

ANSWERS TO CORRESPONDENTS.

C. F. W.—Your attention is called to our rule in regard to anonymous communications.

CINCINNATI.—There is a "triangular repeater" now working in the W. U. Office, at Albany, N. Y. It was contrived by Mr. C. S. Jones, the manager, and we believe works well. It is automatic in its action. We do not consider the invention of a repeater as a promising financial speculation.

J. K. W., Mass.—The "strap and button switch" was invented by Cullen, formerly of Pittsburg, Pa., office, now deceased, and not by General Sup't A. Stager, as you have been erroneously informed. It was the best in use at one time, but is inferior to some more recent inventions.

IKOW.—The automatic system has never had a thorough practical trial in this country, but is about to be tried on the National Line between this city and Washington. A new wire has been put up expressly for it, and the results are looked forward to with great interest by all practical telegraphers. You will find the progress of the experiment fully reported in our columns. The particular apparatus used is the invention of Mr. George Little. He is an Englishman, but has been for some years in this country.

PERSONALS.

Mr. GEORGE H. FLANLY has been reappointed Superintendent of the Police Telegraph of Brooklyn, N. Y., by the new Board of Police Commissioners.

Mr. B. A. SQUIRES, formerly Superintendent Mississippi Valley Railroad Telegraph Company, has resigned his position as manager of Duluth, Minn., office, on L. S. and M. R. R., to engage in other business in the Zenith City of the North.

W. H. SHREFFER, formerly at Bryan, on Union Pacific Railroad, takes Mr. SQUIRES' position in Duluth office.

Mr. JESSE W. CROUSE, formerly of Philadelphia, has been appointed Assistant Superintendent of the Northwestern Telegraph Company, with headquarters at St. Paul, Minn.

Mr. THOMAS K. KNOX, formerly of Marysville, California, is now running a branch office in San Francisco.

Miss LIBBY YOUNG has resigned her position as manageress of the P. and A. telegraph office at Prescott, Wis.

Miss BLANCHARD takes the position vacated by Miss YOUNG.

Mr. CHAS. GILMAN has resigned his position as manager of the P. and A. telegraph office at McGregor, Iowa.

Mr. S. B. DRUMB, of Clayton, Iowa, takes the position vacated by Mr. GILMAN.

Mr. WM. J. ALLEN, formerly assistant train despatcher of the Chicago, Rock Island and Pacific Railway, at Des Moines, Iowa, has received the appointment of train despatcher on the Humboldt and Shoshone divisions of the Central Pacific Railroad, with headquarters at Carlin, Nevada.

Mr. E. V. WEDIN, formerly of the Bankers and Brokers' New-York office, has accepted a position with the Western Union Company at Buffalo, N. Y.

Mr. E. M. FOX, operator at Western Union office, No. 145 Broadway, has resigned his position and gone West.

Mr. W. H. STERLING, formerly of Canandaigua, N. Y., has accepted a situation in the Western Union office at Cleveland, O.

THE TELEGRAPH.

(By Cable.)

THE NEW LINE TO INDIA.

LONDON, June 9.—Communication with Bombay, by way of the new cable, is now complete. Despatches of to-day's date have already (noon) been received.

FRENCH INTERESTS IN TRANSATLANTIC COMMUNICATION.

PARIS, June 11.—It is definitely ascertained that a convention between the French Government and the Société du Cable Transatlantique Français, for the abandonment of the exclusive privileges of that society, was signed yesterday.

BRITISH INTERESTS—TRANSATLANTIC AND AT HOME.

LONDON, June 11.—The telegraph lines are still somewhat deranged, though a great improvement is noticed within the past day or two.

All cable messages to America are despatched by way of Brest and St. Pierre, and all from America by way of Newfoundland and Valonia.

The failure of the Wexford and St. Pierre cables causes much inconvenience to the mercantile community, but the telegraph authorities promise to use all diligence to reestablish perfect communication.

The Falmouth, Gibraltar and Malta Cable.

THE shore ends of the Falmouth, Gibraltar and Malta Cable, at Malta and Gibraltar, will be laid by the "Scanderia," the Lisbon shore end by the "Investigator;" the "Edinboro" will lay the remainder of the Malta and Gibraltar section, and the "Scanderia" the Gibraltar and Lisbon section. The shore end was landed at Malta on the 14th, and paying out commenced satisfactorily from the "Edinboro." All went on smoothly until Thursday, the 19th, when, according to advices from Malta, signals suddenly ceased, and were renewed for a short time on Friday. On Monday, the 23d, signals were, however, resumed, and paying out recommenced. We learn, at the same time, the cause of the cessation of signals. During the course of paying out the cable got over the flange of the drum and caused a stoppage, damaging the machinery and breaking the cable. The damage was sufficiently great to compel Sir J. Canning, who was in charge of the expedition, to run for Algiers to repair; in the meantime the "Scanderia" grappled for, recovered and buoyed the cable. On the 23d the "Edinboro" returned, having most expeditiously completed repairs, and splicing on, recommenced paying out, and we trust shortly to hear of her having completed the first section.

The electrical condition of the cable has been perfect throughout, and, as usual, has much improved since its manufacture.—*Mechanics Magazine.*

Serious Accident to a Telegraph Operator.

MR FRANK WYMAN, operator on the Pacific and Atlantic telegraph line at Reed's landing, Minnesota, while engaged recently in moving his office wires, fell from a pole thirty feet high to the ground, breaking his arm in several places, and he also broke his nose.

Military Cipher Operators.

It is not generally known, but during the war the cipher operators connected with the United States military telegraph, under Generals Stager and Eckert, were at all army headquarters. Their duties were confidential and very important, inasmuch as all military movements ordered by General Grant were transmitted through them. They were in possession of intended army and navy expeditions sometimes weeks before commenced, and, had they not been patriotic and truly loyal, could have defeated our armies and delayed our final triumph. These quiet, unassuming gentlemen, were very poorly paid, and frequently not well provided for. However, they did not complain of their hardships, but worked on faithfully until the rebellion was crushed. The operators were not commissioned, nor even borne on the army rolls, and having no discharges from the service, will not be remembered by the country and their valuable services acknowledged like officers and soldiers, as they should be. We think, even at this late day, it would be well for Congress to pass an appropriate resolution complimenting the army cipher operators, and thus place them before the country in a proper light, so that their names may be held in grateful remembrance, for having, by their loyalty and faithful services, contributed to the success of our armies.—*Washington (D. C.) Chronicle.*

The First Telegraphic Instrument.

AN interesting relic of the early days of telegraphy has been discovered at Morristown, N. J. It is the first instrument by which messages were received and sent by the aid of the electric current. When Prof. Morse was experimenting on the power and capability of electricity, as adapted to the transmission of words, he spent a large portion of this time at Morristown, where he was assisted by Alfred Vail, Esq., a practical machinist and inventor. At the Speedwell Iron Works of that town, then owned by the father of Mr. Vail, the experiments on the wires and on the construction of suitable instruments took place. On the completion of the experiments and the removal of Mr. Morse to Washington, to bring his invention before Congress, Mr. Vail accompanied him, and, receiving the appointment of Assistant Superintendent of Telegraphs, was stationed at Baltimore, at that end of the experimental line. The instrument now at Morristown was one of two taken from Morristown by Morse and Vail—Morse using one at Washington, and Vail the other at Baltimore. The first message sent was the now well known "What has God wrought?" which Morse transmitted to Vail; but the first public message was the news of the nomination of Polk to the Presidency by the Baltimore Convention of 1841, sent by Vail to Morse. These instruments were in constant use for six years, when Mr. Vail, returning to Morristown, brought his with him, and where it has still remained in the possession of his family. Mr. Vail dying soon after, his instrument was specially left by a clause in his will to his eldest son as an heirloom, while parts of instruments

made during the experimental trials were left to Prof. Morse, with a request that he would give them at some future day to the New Jersey Historical Society. The old instrument works as well as when first made, and on Saturday a message was sent to New York, and a reply received at Morristown. An excellent photograph of the instrument was also taken, and with this a visit was made to Prof. Morse in New York. The Professor was delighted to see the representation of the first instrument, having destroyed, as he said, the follow instrument which he had used in 1844. He readily recognized it, and wrote a certificate across the picture as to its being a true photograph of the first instrument ever used to transmit public messages. He also expressed a wish that the photographs might be generally distributed, that it might be seen how little in essential points it differed with those now in use. With the exception of size and clumsiness, the instruments are almost exactly similar. The dimensions of the instrument are 16 inches in length, 7 inches in height, 6 inches wide, with two magnets of 3 inches diameter. The paper used was 2½ inches in width, three pens being proposed to be used. The weight of the instrument is 20 lbs.

TELEGRAPHIC BREVITIES.

A NEW line to the Saranac Lakes has just been completed, with offices at Saranac, Redford, Clayburgh, Franklin Falls, Bloomingdale, Martin's, at Saranac Lake, and Paul Smith's, at St. Regis Lake. This will be a great convenience to tourists to the Adirondacs. The business will be repeated at Plattsburg, N. Y. The line belongs to the Montreal Telegraph Company.

The break in the French submarine telegraph cable has been demonstrated to be about 295 miles east of the Massachusetts shore, off the southwest corner of Cape Sable.

The Lake Superior and Minnesota Telegraph Company has severed its temporary connection with the Pacific and Atlantic Telegraph lines at St. Paul, and has been bought out by the Northwestern Telegraph Company, and the wire transferred to the Northwestern Company's office.

FOREIGN TELEGRAPHIC NOTES.

SEVERAL persons have lately been sentenced, in various parts of Great Britain, to fines, and in other instances to twenty-one days' hard labor, for breaking insulators on telegraph poles.

A material reduction has been made in the tolls on cable messages between England and India, via Gibraltar and Malta.

It is considered satisfactory for all parties concerned that an arrangement has been come to between the China Submarine Telegraph and the Great Northern companies. By this means competition will be avoided between Hong Kong and Shanghai, a section of the line which, though likely to be well supplied with messages, would hardly furnish traffic for two competing companies.

Advices from St. Thomas to the 30th May state that the steamship Dacia, of the West India and Panama Telegraph Company, expected there, had not arrived. Sir Charles Bright was still there.

The Bonaventura, of the Panama and West India Telegraph cable fleet, having on board a large section of the submarine telegraph cable, arrived at Kingston, Jamaica, May 23d.

The manufacture of the China Submarine Company's cable commenced at the contractors' works, at Greenwich, on Saturday, May 28th.

The Australian cable is rapidly progressing, about 150 miles having been completed.

The cable for the British-Indian Extension Telegraph Company is being rapidly made; more than 1,400 miles are already manufactured, and shipment will commence soon.

The submergence of the deep sea cable from Gibraltar to Lisbon was to commence May 28th.

New Patents,

For the week ending May 24, 1870, and each bearing that date.

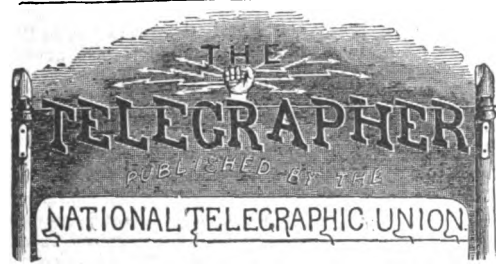
No. 103,331.—GALVANIC BATTERY. Joseph Hill, New York, assignor to himself, M. S. Frost and E. P. Huyler, same place.

Claim.—1. Suspending horizontally the negative plate in or near the top of a jar or other vessel, under such conditions as shall secure a full and equable coating of mercury and circulation of the fluids, substantially as herein described.

2. The use of wire cloth as the positive element in a galvanic battery, substantially in the manner and for the purpose specified.

No. 103,383.—ELECTRO-MAGNETIC INDICATOR FOR BUNGAL-ALARM AND FOR OTHER PURPOSES. James P. Snyder, Brooklyn, N.Y.

Claim.—An alarm indicator, arranged for automatically causing a secondary and independent circuit at the indicators, by the action of the armature levers, with a disk or other device, and the springs or other closing devices, and a secondary line of wire, T, H, connecting the battery and the magnet, all substantially as specified.



SATURDAY, JUNE 18, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D.C.

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GOVERNMENT TELEGRAPHS.

We have received from the Executive office of the Western Union Telegraph Company a valuable and interesting pamphlet, containing a *verbatim* report of the argument of Mr. WILLIAM ORTON, the President of that company, on the bill to establish Postal Telegraph lines, before the Select Committee of the U. S. House of Representatives. Mr. ORTON's argument was continued at several meetings of the Committee, and he was subject to a very close and searching cross-examination, not only in reference to the general subject of telegraphic administration, but especially in reference to the management of the company which he represented. He replied with apparent candor and frankness to all interrogations. Mr. ORTON's argument and exposition of the Postal Telegraph fallacy is able and exhaustive, and its general circulation will open the eyes of many who have been deceived in reference to this subject by the fallacious and incorrect statements and statistics which its advocates have so persistently and industriously circulated during the last two or three years.

In opposing what he honestly believes to be a measure fraught with great evil to the Government, people, and the telegraphic profession, the editor of this paper will not, certainly by any official of the Western Union Company, be regarded as doing so particularly in the interests of that company. While to the company or its management, in their legitimate business, we have no antagonism, yet, as the organ of the telegraphic profession, we have had the good or bad fortune, as it may be regarded, to incur their displeasure. We oppose the project solely in the interests of the Government, the people and the profession, without reference to its effects upon the individual interests of the proprietors of telegraph lines and companies.

We have not had time as yet to read this document very carefully, but a cursory examination of Mr. ORTON's statements and arguments shows it to be a most complete and masterly presentation of the objections to and arguments against an interference by the Government in the telegraph business of the country. He very neatly and effectually turns upon the postal telegraphers the statistics which they have been at much pains to collate and elaborate, showing that in Switzerland and Belgium, the paradise of the postal telegraph, according to Messrs. HUBBARD and WASHBURN, the business is actually done at a loss to the Governments, and that this deficiency would constitute a large percentage of the expense of administration of the lines, were it not for the high rates charged for transit messages, or messages passing from one country to another, which are heavily taxed. Each European nation endeavors to cheapen telegraphic service to its own people by imposing the cost upon its neighbors.

This is one of the peculiar advantages of a Government telegraph which the United States are not so situated as to make available.

He also demonstrated unanswerably the absurdity of the argument that a reduction of tolls to the rates proposed by the postal telegraph advocates would so increase the number of messages as to make the business remunerative. Nothing has been more fully shown by experience, or can be more satisfactorily demonstrated mathematically, than that any considerable increase in telegraph business necessitates a proportionate increase of facilities and of the expense of working the lines. That the Government would be able to manage the business more economically than private enterprises is an assertion so manifestly absurd that it is a waste of time to discuss it. Consequently, at the rates proposed, the Treasury must inevitably be saddled, not only with a large initial investment of not less than from thirty millions to fifty millions of dollars, but a large and annually increasing deficit in the expense of working the system.

We have neither time or space this week even to cursorily review Mr. ORTON's argument, but may refer to it more fully hereafter. Meantime we are pleased that the Western Union Company have published it in this shape, and hope that it will be given a general and wide circulation.

A New Feature.

WE have, from time to time, received a large number of letters from subscribers and others, making inquiries of the editor in regard to various telegraphic matters. Considering the diffusion of useful information one of the duties of our position, we have, whenever practicable, replied by letter, or, when requested, through the columns of the paper. In view of the large and increasing number of such applications, we have determined to make no replies by letter hereafter, except upon special request, accompanied by a stamp. Commencing with the present number of THE TELEGRAPHER, we shall devote a special department of the paper to the express purpose of answering, to the best of our ability, all questions of this nature, not only for the benefit of each particular correspondent but for the general information of the profession.

We shall be happy, at all times, to afford any information in our power to all inquiring applicants, whether subscribers or not, and whenever the nature of the case admits of it, we shall give the replies through the proper department of THE TELEGRAPHER, on the sole condition that each applicant shall furnish their name and address, not for publication, but simply as a guarantee of good faith on the part of the questioner. We trust that such a discussion of the many knotty questions that arise in the art telegraphic may prove not only entertaining but profitable. If properly conducted, such a department can hardly fail to become one of the most attractive and interesting features of the paper.

Tillotson Gives an Excursion.

LAST week the National Car Master's Association held a convention in this city, and after the conclusion of their deliberations on Thursday our jovial and generous friend, L. G. TILLOTSON, treated them to an excursion around the harbor, in company with a number of invited guests, connected with the railway and telegraphic interests. The fine ferry boat "James Fisk, Jr.," was chartered for the occasion, being gaily decorated with flags and provided with a fine brass band, which at intervals enlivened the proceedings with inspiring music. The excursionists left the foot of Chambers street at 3:30 P. M., and after steaming up the North river as far as Twenty-third street, returned to the Narragansett steamship pier, where they found the inevitable FISK, Jr.. The admiral gracefully declined TILLOTSON's invitation to come on board and participate in the festivities, as he was obliged to go and buy some railroads, and it was getting late in the

afternoon. So the party sailed down the bay, paying their respects to the French frigate, the North German frigate Arcona, and the monitor Miantonomah, and thence up the East river and back to the foot of Chambers street, where they disembarked, after giving three rousing cheers for TILLOTSON, which he gracefully acknowledged by a short speech, delivered from the summit of a high and somewhat uncertain pile of boxes, which had accumulated during the exercises. Among the telegraphers present we noticed our friend REID, of the *Journal*, and and Mr. DENNIS, chief operator of the P. & A. lines in this city. The whole party, especially those from the interior and Western states, enjoyed themselves immensely. Mr. TILLOTSON and his energetic assistants, Messrs. GAVIN and SHELDON, were indefatigable in promoting the comfort and enjoyment of their guests, and the affair in every respect proved a decided success.

Friend TILLOTSON was in his element, and apparently enjoyed the excursion as fully as any of the guests. He privately expressed to us a hope that the telegraphic fraternity would hold a convention here during the season, that he might have an opportunity to tender them a similar compliment.

The Southern and Atlantic Telegraph Company.

FREQUENT reference has been made by Washington, D. C., correspondents of THE TELEGRAPHER to the construction of a new line south from that city. This line is being built by a company entitled "The Southern and Atlantic Telegraph Company," and it is announced that the immediate purpose of the company is to build a main line of telegraph from Washington, D. C., to New Orleans, to run through the various cities, or such of them as appreciate its importance sufficiently to contribute to its construction by subscription to its stock. We understand that this new line is to connect with the Franklin Telegraph Company at Washington.

We are not informed as to the nominal amount of the capital stock of this company, or upon what terms it is to be issued, or specially, under what auspices it is being built, except that the construction is under the direction of Mr. A. J. BALDWIN. We are not, therefore, in a position to advise our Southern friends whether this is a speculative concern, merely got up to make money out of construction, by building a cheap line at double first class prices or not. We would recommend them, however, before investing much money in the enterprise, to thoroughly investigate it, and assure themselves that its financial matters are under the control of strictly honest and responsible men.

A good competing line south is very much needed, and should be at once provided for, but we do not desire to see imposed upon the Southern people a miserable rickety sham, entitled by courtesy a telegraph line. We do not desire to be understood as thus characterizing this enterprise. As has been before stated, we are not properly informed on the subject to give an opinion one way or the other.

Recent British Patents.

SPECIFICATION.

No. 2,875.—Sir C. T. BRIGHT, Westminster Chambers. *Electric Telegraphs*, dated October 4th, 1869.

This consists in so arranging telegraphic circuits for the transmission of electric signals through metallic conductors, that when a wire is connected for the purpose of transmitting telegraphic signals, one of the poles of a galvanic battery or other apparatus for generating electricity is connected to one coil of a relay or an indicating or signalling instrument of any kind, and the other end of such coil of the relay or indicating apparatus is connected to the metallic conductor through which the currents are passed. The same pole of the galvanic battery or apparatus for generating electricity is also connected to another coil of the relay or indicator, and the other end of such coil is connected to one of a resistance coil, or series of resistance coils, or tubes of water or other apparatus of low conducting power. Patent completed.

No. 1,192.—GEORGE FENWICK, Gateshead-on-Tyne.

Improvements in the manufacture of ropes or cables to be used for telegraphic or other purposes, and in machinery for producing such cables or ropes.

No. 1,055.—LIONEL WEBER, Rue Royale, Place du Congress, Brussels.

Improvements in galvanic cells and batteries. 9th April, 1870

SOLE AGENCY IN THE UNITED STATES
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Messrs. RICHARD JOHNSON & NEPHEW,
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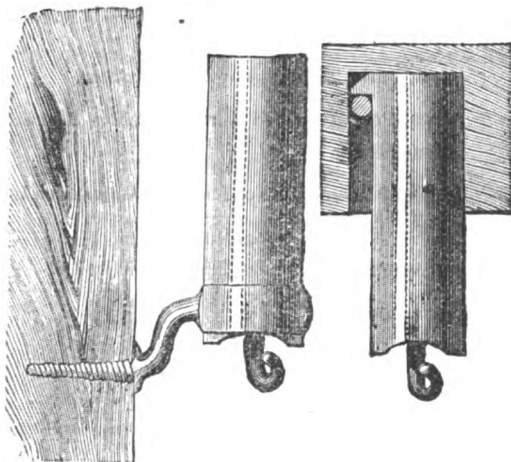
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The improvements introduced in the construction of this Insulator make it, beyond question, the BEST.

Its insulating properties exceed those of the glass a hundred thousand fold.

In strength and durability it has no equal.

They are warranted not to break or part.

They are made with a screw shank, to fasten into the pole, price 38 cents each, or without the screw, for cross-arms, 30 cents each.

Pamphlets furnished, with full description.

A stock of the Insulators always on hand at our stores.

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WANTED,

in New York City, a first class OPERATOR, as substitute, on day work, for one month from July 1st. Salary, \$100. Address "Idaho," care of THE TELEGRAPHER, giving references.

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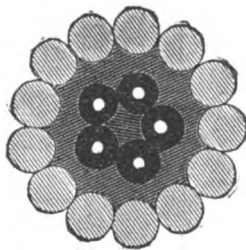
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have been appointed by me GENERAL AGENTS for the sale of any Telegraph Cable or Wire manufactured at the Works in New York, at Factory Prices, delivered in New York.

JOHN THORNLEY, 503 Chestnut St., Philadelphia,

has been appointed Agent for the sale of any and all goods manufactured by me, at Factory Prices, delivered in New York.

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SUBMARINE CABLE.

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KERITE,

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COMPOUND RUBBER COVERED WIRE

SUBTERRANEAN & AERIAL WIRES,

OF THE

HIGHEST INSULATION.

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No. 104 Centre Street,

EXCLUSIVE AGENTS

offer for sale, as TELEGRAPH and ELECTRIC CONDUCTORS, Wires protected by the BEST INSULATOR and STRONGEST RESISTANT TO CHEMICAL ACTION and ATMOSPHERIC INFLUENCE.

After the experience of several years in the use of KERITE for purposes of insulation, we have concluded to adopt it as the very best substance for wire covering, not only for use of offices but for SUBTERRANEAN, SUBMARINE and AERIAL LINES. We have used it unprotected for years under ground, and exposed to the most injurious atmospheric influences—to heat, cold and moisture—and have yet to learn its failure, when other ordinary insulating substances would have been rapidly destroyed. UNDER WATER it has retained an electrical charge for many hours, thus ranking it in the HIGHEST GRADE of NON-CONDUCTORS.

We have, therefore, made arrangements not only to secure THE EXCLUSIVE AGENCY for its sale, for the purposes for which we have already sold it so largely, but to furnish complete

IRON-CLAD CABLES,

of the usual size, with KERITE COVER, believing that it will exceed, in insulation for submarine purposes, ANYTHING HITHERTO MANUFACTURED.

We shall be happy to furnish estimates for any amount and size of cable, which will be found to compete with any other construction, both in quality and price.

In corroboration of our statements we append extracts from reports of those who have exposed it to the severest practical tests.

From Prof. SILLIMAN, of Yale College, Nov. 10, 1868.

"I am satisfied, as the result of my own researches, that ozone is by far the most fatal of atmospheric influences. I have submitted portions of KERITE to the action of a highly ozonized air for a sufficient length of time to prove them, and at the same time have exposed the best English Gutta-Percha Covered Cable to the same tests, with the following result: After long experience KERITE resists perfectly! The best English Gutta-Percha Cable was speedily destroyed. A few days' exposure to ozone would produce more effect than many years in a normal atmosphere, exposed to carbonic disulphide, nitric acid, sulphuric acid, sulphur dioxide, nitric peroxide, chlorine gas and alkaline hydrates. Gutta-Percha is immediately dissolved in carbonic disulphide, and powerfully acted upon by alkaline hydrates. Some samples of KERITE resist the action of the former in a surprising manner, and are completely unaffected by the latter."

"NEW YORK, May 14, 1870.

"In nearly two years since the foregoing was written I have made a considerable number of experiments upon the KERITE Compound of A. G. DAY, all of which tend to confirm former results; while the practical test of the continued use of electrical conductors covered with it, and the growing favor with which they are received by electricians, offers the best guarantee of its permanent value.

"B. SILLIMAN."

From MOSES G. FARMER, of Boston, Mass.

"I have tested 195 feet of this wire, and found it a better insulator than Gutta-Percha.

"The instrument used would have shown a current through 300,000 miles of Telegraph wire. The 195 feet showed no leakage in water. The KERITE insulated wire withstands atmospheric agencies wonderfully, and will last for years when exposed to the atmosphere; likewise, when buried in the earth, there is no reason to apprehend decay. It is a well known fact that Gutta-Percha deteriorates very rapidly when exposed to atmospheric influences, and therefore cannot be advantageously used for the covering of wire for out-door exposure unless buried in permanent moisture."

From Mr. E. A. CALAHAN, Supt. Gold and Stock Telegraph Co., May 14, 1870.

"Under all circumstances it has given me the fullest satisfaction. The peculiar nature of our business renders it necessary for us to use the most perfectly insulated wire. I have tried several kinds of insulated wire, but have been compelled to take down and substitute KERITE instead. Wire strung a year since is as good as the first day put up. Have tested it after three days' constant rain and could not find one degree of escape. We use it in gas pipes, and sometimes placed near furnaces subject to very high temperature. I have not been able to detect the slightest change from its original condition.

"We have exposed it to the extreme cold and heat of the past two years and a half, strung over the roofs of buildings, which we consider the best test of its indestructible and insulating qualities."

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INDUCED AND DIRECT CURRENTS;
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They guarantee to give satisfaction to all who favor them with orders, in the promptness of execution and in the quality of articles supplied.

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**AMERICAN
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The superiority of the COMPOUND TELEGRAPH WIRE, compared with iron, consists in its LIGHTNESS, reducing by over fifty per cent. the number of poles and insulators required;

Relative TENSILE STRENGTH, homogeneity and elasticity—decreasing the liability to breakage from cold weather, sleet, etc.;

CONDUCTIVITY—insuring great improvement in the working of lines in any condition of the weather;

And in its DURABILITY, which greatly exceeds that of the best galvanized iron wire;

Altogether resulting in a very great reduction in the cost of maintaining and working telegraph lines, while, at the same time, insuring

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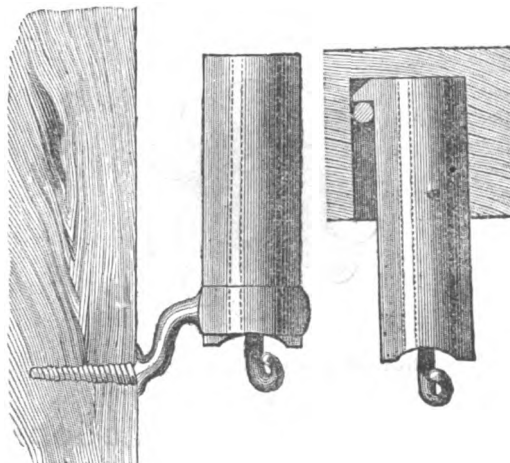
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PRACTICAL TELEGRAPHY,**
BY
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ENGINEER TO THE
ELECTRIC AND INTERNATIONAL
TELEGRAPH COMPANY.

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OF
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It has been the custom of the present publisher and editor of
"THE TELEGRAPHER"

to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to

INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES AND INJUSTICE practised by them upon its employees, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

The President of that Company, however, distinctly disavows this action, and says, in a communication to the editor of THE TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S) 'discontinuance and discountenance' a test of competency for our service."

It remains to be seen whether the Practical Telegraphers of this country can be relied upon to stand by those who seek to secure to them JUSTICE AND FAIR TREATMENT.

In addition to the inducement offered above to exertions in support of the paper, we offer the following

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For FIFTEEN SUBSCRIBERS a No. 1 TELEGRAPH KEY, any pattern that may be desired.

For TEN SUBSCRIBERS, the Fourth Edition of "Cully's Handbook of Practical Telegraphy."

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For THREE SUBSCRIBERS, F. L. POPE'S "Modern Practice of the Electric Telegraph."

In addition to the above, we will give to the person who shall, on or before the 31st of May, send us THE LARGEST LIST OF SUBSCRIBERS, not less than FIFTY,

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FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-160th of the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same.

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the cheapest, most reliable and simple repeater as yet invented

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Pocket Relays, with all the adjustments of the above, and good Lever Keys.....	22 00
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All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package.

He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

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THE TELEGRAPHIC.

JOURNAL OF ELECTRICAL PROGRESS.

Vol. VI.—No. 44.

New York, Saturday, June 25, 1870.

Whole No. 206.

ELECTRICAL PHENOMENA AND THEORIES.

On Thursday, May 26, Prof. Tyndall delivered his fifth lecture on "Electrical Phenomena and Theories," at the Royal Institution, London. In the course of some theoretical speculations introduced into this lecture Prof. Tyndall said that it is not yet quite clear as to the precise way in which the electric current is supported by the solution of the zinc, but the following facts and considerations ought to be known: when two different metals are brought into contact, with no liquid between them, one of them charges itself with positive and the other with negative electricity. We have here the famous "contact force," which Volta and his followers considered to be the urging power of the Voltaic current. But the generation of heat and the performance of mechanical work by the mere contact of two metals, would be equivalent to a perpetual motion; it would be at variance with the law which requires for the production of any power an equivalent consumption of some other power. It is, however a fact that when two different metals touch each other the positive electricity resorts by preference to one metal and the negative electricity to the other: the two electricities are, as it were, attracted differently by the two metals. This difference of attraction, however, only causes a momentary rearrangement of the two electricities, which pass, when the contact is made, into a new condition of equilibrium. As long as the contact continues this equilibrium is not disturbed; there is no continuous current. We may regard the distinct atoms which enter into the molecules of a compound as charged in a similar manner. For example, the atoms of oxygen and hydrogen, when they unite to form a molecule of water, may be looked upon as charged like the two touching metals. This would be the case if the atoms, like the metals, possessed different attractions for the two electricities. When strips of zinc and platinum are plunged into such a liquid the positively charged atom will turn towards the one metal and the negatively charged atom towards the other. But, unless the metals touch each other, electrical equilibrium immediately sets in, a constant state of electric tension being set up at the free ends of the two metals. The electricity at the ends may be permitted to flow into a condenser, and may be thus stored up; such a condenser may then be discharged through a covered wire, which passes round a magnetic needle, a deflection of the needle being thus produced. Thus, in Davy's experiment with his large voltaic battery, where with he charged his battery of Leyden jars, the latter, after having been charged, might be discharged through a galvanometer, a magnetic deflection being thus produced. But the metals, once relieved of their charge, would immediately reload themselves with electricity, and might again be employed to charge a Leyden battery, and to produce a deflection of a magnetic needle. At no moment during this process would the battery circuit be complete; still we should have a succession of magnetic actions similar to those observed with a closed circuit. In fact, in the closed circuit the solution of zinc incessantly removes the charged surface of that metal by dissolving it away, and enables the zinc to take a fresh charge; an incessant effort, never fully satisfied, is made to establish electric equilibrium; the incessant renewal of the effort maintains electric current. Towards the close of the lecture Prof. Tyndall exhibited at work a large battery, constructed on the principle of Ritter's secondary pile. When an electric current is sent through acidulated water a film of oxygen covers one electrode and a film of hydrogen covers the other: if the two electrodes be then disconnected from the battery, and connected with each other by means of a wire, an electric current is obtained, which, however, soon ceases, as the plates lose their thin film of gas. The lecturer exhibited a large battery made upon this principle, and consisting of some dozens of pairs of copper plates. No other metal was used. After this battery was

charged by connection with a ten cell Grove battery, it gave a current of its own of short duration, but of great power while it lasted, for it ignited and fused several inches of platinum wire.—*Mechanics' Magazine.*

Quick Method for Learning the Morse Alphabet.

We publish the following by request, and as a matter of interest to all who are learning to operate the Morse system:

LITTLE'S QUICK METHOD FOR LEARNING THE MORSE ALPHABET.

DOTS AND DASHES.

A N D U W G Q X

DOTS AND DASHES.—(Continued.)

B V F K J

Thus a dot and dash represent the letter A. The same reversed, thus: dash and dot. . N. By running the letter N together twice. . J.

DASHES.

T L M

Thus: Short dash..... T.
Long dash..... L.
Two short dashes..... M.

DOTS ONLY.

E I S H P

Thus: One dot represents E.
Two dots " I.
Three dots " S.

DOTS AND SPACES.

O C R Y Z &

Thus: Dot, space and dot represent O.
Two dots, space and dot " C.
Dot, space and two dots " R.

LETTERS RUN TOGETHER.

AA TTTT D N U D

Thus: AA run together is a comma.
Letter T four times, a paragraph.
U D, a period.

A U T O M A T I C

It will be seen that the spaces between words are about equal to twice the length of spaces between letters. The eye soon becomes accustomed to the requisite spaces between dots, as also between dots and dashes.

In writing numbers and figures use Roman numerals.

Thus: } Twenty.
X X

A TELEGRAPH line will soon be in operation to Yancton, the capital of Dacotah Territory. The Great Western Telegraph Company are now cutting cedar poles on the Missouri, forty miles above Yancton for the erection of a branch telegraph wire from Omaha to Sioux City, Iowa, and thence to Yancton, which is to be in operation in November next.

New Patents,

For the week ending May 17, and bearing that date.

No. 103,117.—ALARM-TELEGRAPH SIGNAL BOX. Job Abbott, Canton, assignor to Automatic Fire Alarm Co., Leetons, O.

Claim.—1. A signal box provided with an automatic signaling mechanism, and with a switch mechanism operated by said automatic mechanism, and so arranged that said automatic mechanism closes the switch, and thus switches the whole operating mechanism out of the circuit at the completion of each fire alarm given by said automatic mechanism, substantially as is herein specified.

2. A signal box, divided by a horizontal partition into two apartments, and provided with a separate hinged inner door to each of said apartments, and with an outer door enclosing both the inner doors of the box, one of said apartments containing the automatic signaling mechanism and the other the key mechanism, substantially as is herein specified.

3. In combination with the inner door of a signal box a stop mechanism, arranged in the interior of the box, and operated by an arm on the main shaft of the automatic mechanism, for the purpose of preventing said inner door from being closed until the winding lever is in such a position as to prevent its injury by the closing of said door, substantially as is herein specified.

4. The combination of the inner door U, provided with the slot 21, pivoted shield piece 12, 13, 14, with knob hole 15 and spring 19, or its equivalent, and winding lever G, with knob J, said knob extending through the knob hole 15 and the slot 21, substantially as and for the purpose specified.

5. In combination with a signal box provided with two hinged inner doors, a locking mechanism operated by and acting upon said inner doors, in such a manner that the opening of either door causes the locking of the other door, so that it cannot be opened until the first opened door is closed, substantially as and for the purpose specified.

6. The switch wheel Q, having the insulated metallic strips 23, 24, 25 arranged on its face, when used in combination with the four anvils, t, j, k, l, forming the termini of the parts of two circuits, the several parts being arranged as and for the purpose specified.

7. In combination with a signal box having the automatic mechanism and key mechanism arranged in separate apartments, a switching mechanism operated by the inner door, which encloses the key mechanism, and combined with the different circuits in the signal box, in such a manner that upon opening the inner door enclosing the key mechanism the automatic mechanism shall be switched out of the main circuit, substantially as is herein specified.

8. In combination with a signal box provided with automatic and key mechanism and switching mechanism, arranged and operating as specified in seventh claim—a locking mechanism operated by the automatic mechanism, and serving to keep the inner door enclosing the key mechanism locked, until the completion of any signal commenced by the automatic mechanism, substantially as is herein specified.

For the week ending June 7, and bearing that date.

No. 103,831.—APPARATUS FOR LIGHTING GAS BY ELECTRICITY. William W. Bachelder, Boston, Mass.

Claim.—1. The combination and arrangement of an electro-generator with a gas burner or pipe, in such manner that the gas must pass through the electro-generator to said burner, substantially as described.

2. The electro-generator interposed between the base and mouth of the burner, in such manner that one of its sections may have an axial and a partial rotary movement over and upon the stem of said burner, substantially as herein described.

3. The method of operating the upper section of the electro-generator by means arranged beneath the lower section thereof, substantially as herein described.

4. In combination with an electro-generator composed of a horizontal fixed and a movable section, A B, the arrangement of the chain H of the electrical conductor, substantially as herein described.

5. The electro-generating apparatus, clamped in position upon the bracket or gas pipe C³ by means of the stem E of the burner and yoke C¹, substantially as described.

6. The combination, in an apparatus for lighting gas by electricity, of the positive and negative plates A B of the electro-generator, the enclosing sleeve D D', the locking yoke C, the manipulating arms I, the conductor F, with its chain H, and the gas burner E, the several parts being constructed and arranged substantially as and for the purpose specified.

No. 103,875.—ELECTRO-MAGNETIC SIGNAL APPARATUS FOR RAILROADS. Thomas S. Hall, Stamford, assignor to Hall's Electric Railway Switch and Draw Bridge Signal Co., New Haven, Ct.

Claim.—1. The combination of the electro-magnet A and its armature E with the rod b, swinging arm c, cord d, disk e, arbor f, and signal disk F, all arranged and operating substantially as described, so that the signal is raised when the magnet is charged, as specified.

2. Connecting the swinging armature E with one or more movable bars k o, so that when the armature is attracted by its magnet it will serve to unite other wires, to establish circuits through them, as set forth, whereby one signal will be caused to set others, as described.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., June 22d.

TO THE EDITOR OF THE TELEGRAPHER.

THERE is little doubt but that Mr. Washburn will report his Postal Telegraph Bill from the special committee very soon, if possible this week or next week at the furthest. At the same time he will make an elaborate report on the subject of the proposed Government telegraph, intended to offset the damaging effect on the project of Mr. Farnsworth's report from the post-office committee to the last Congress, and Mr. Orton's able argument before the committee, recently published by the Western Union Company. The bill will be placed on the calendar, and with the report be ordered printed, and during the recess will be extensively circulated by the postal telegraph advocates.

In the Senate, on Monday last, on the debate on the Post-office Appropriation Bill, Mr. Stewart, of Nevada, moved an amendment providing for the postal telegraph system, but subsequently withdrew it at the suggestion of Mr. Thurman, in order that the sense of the Senate on taking up the amendment abolishing the franking privilege might be taken.

Mr. Stewart argued very strongly in favor of a postal telegraph, and severely criticized the Western Union Telegraph Company and the Associated Press, arguing that the interests of the latter compelled it to pander to local prejudices in the dissemination of news, and that the monopolizing tendencies of the company needed restriction. It is not probable that it was expected to get the amendment in the bill, the motion having obviously been made to enable Mr. Stewart to get off his postal telegraph speech.

Mr. Drake, of Missouri, submitted to the Senate the following resolution on Monday, which was referred to the Finance Committee:

"That all foreign telegraph companies having offices, and receiving moneys in the United States, are subject to the provisions of the Internal Revenue laws; and that all executive departments and officers of the Government are hereby directed and required to enforce said laws, as to said companies, both as to their future and past receipts of income, and charges accruing, collected in the United States."

At the evening session of the Senate Mr. Sumner submitted a copy of the correspondence from the State Department, setting forth that the French Cable Company had renounced the exclusive concession to that company to land cables on the coast of France, which was ordered to be printed.

In the Senate to-day Mr. Sumner, from the Committee on Foreign Affairs, reported the bill to facilitate telegraphic communication between the United States and the Bermuda Islands, with a favorable recommendation; also the bill to authorize a submarine cable from the United States to Belgium, with a similar recommendation. Neither of these bills provide for a subsidy from the Government, and the latter gives to our Government the free use of the cable for thirty minutes during each twenty-four hours. It is doubtful, however, in the present state of the business, and the few days remaining of the present session, whether any definite action upon them will be reached before the adjournment. CAPITOL.

The Morse Testimonial.

ALLEGHENY CITY, PA., June 13.

TO THE EDITOR OF THE TELEGRAPHER.

In your issue of May 28th I find a communication from Washington, D. C., signed "Perdu." I desire to correct certain statements made by this correspondent.

When the idea of this testimonial first occurred to me I felt at once that I did not command influence enough to make the matter a perfect success, outside of my personal friends, and, naturally, I at once looked for such a person to take the lead in the affair. Up to that hour I was personally unknown to Mr. J. D. Reid, but from the tone of his editorials I judged he would be the person most likely to carry the matter through successfully. I wrote to him, and he agreed to use his influence and to act as one of the executive committee. Finding that his suggestions and ideas were far in advance of mine, I insisted on his taking the chairmanship, and he finally agreed to do so. This is all the correspondence I have had with any of the Western Union officials or representatives, and I am not aware that Mr. Reid claims to be among the former.

But I desire no controversy with "Perdu." I think he has done injustice to certain parties and I have attempted to correct his statements. If he will not believe us when we say in all sincerity that the matter is hereafter to be a national affair—in which we invite all connected with the telegraph to participate, and in the final triumph of which all will share alike—we can do no more. The men in whose hands the money rests are above suspicion. As Mr. Reid has said, if you will make us your depository we will hail all subscriptions from any source gladly, and will, to the best of our ability, conduct the matter to the grand success which we believe awaits it. R. B. HOOVER, Secretary.

The Telegraph on Cape Cod.

CAPE COD, MASS., May 31st.

TO THE EDITOR OF THE TELEGRAPHER.

TELEGRAPH matters in this section of the country are rather quiet. Only one wire extends the length of the Cape, from Provincetown at the end, or jumping off place, to Sandwich, where the Cape widens out and joins herself to the rest of the old Bay State. The wire, however, runs to the "Hub," making a circuit of about 150 miles, loops and all. Our brother, Rand, who worked this circuit at Boston, in connection with other wires, in the way room (where the ladies are), was allowed to vacate during the "late unpleasantness," and his place has since been filled by Miss Fisher. Of eighteen offices seven are filled by young ladies, one of whom has a novel way of "cutting out" for the night, namely, by pulling out the line wire from her relay! As the line is not in demand for report or other business after she closes, it may be all right; it certainly saves a piece of wire and a plug. Perhaps the company prefer a line plug to a brass one! No offence intended.

We hope "Owl" will keep us posted about affairs in the Southern division. How's that new N. O. wire coming on? Any signs yet? We are glad Spinner got "chained and caged." Just what he deserved! Starnes is the man to draw up resolutions, whether "against going out" or for a testimonial of personal regard, etc. We trust J. J. F. will bear his new honors meekly, as night chief at "H" office. Joe must not let Dyer necessity be the cause of *Fowlering* any of the wires!

All I have to amuse myself with now is the click of the hoe—in fact, I've turned farmer *pro tem*. O. M. S.

Happy Funerals.—The Olive Branch Accepted.—Telegraphic Matters.

WASHINGTON, D. C., June 12.

TO THE EDITOR OF THE TELEGRAPHER.

OUR friend of the *Journal*, in his issue of the 1st, says: "We are fond of funerals that bury this world's griefs and hatred." We are glad to hear it, but do the Western Union officials practice what they preach? It is known that the Western Union Company did not pay the usual dividend for the last quarter, and assigned as a reason the losses incurred by the late strike. Since the strike the company have been grinding down the salaries of the operators to the lowest possible figure, and we presume they will not pay a dividend until they have made enough out of the operators, by reduction of salaries, to compensate them for these losses. Yet their official organ says they are fond of funerals that bury this world's griefs and hatred! We also approve of that sort of funerals, and if the Western Union Company are so anxious to bury old difficulties and cry quits, why do they persist in grinding down the operators? Now let them have a funeral and bury this world's griefs and hatred, and place us, who happened to be in the strike, back in our old positions, and pay us salaries equal to those we formerly received, instead of compelling men to work for \$85 per month who received \$100 previous to the strike. Until this is done we cannot think they are in earnest about burying this world's griefs and hatred.

We are glad to see the names of some few, outside of the Western Union Company, added to the Executive Committee of the Morse testimonial. There are several companies yet unrepresented, and we would like to see them represented. Washington would like to have a representative on the committee outside of the Western Union Company. Put down the names and we will begin to think you are really in earnest about making it *National*. Why was not this done at first, and these men saved the mortification of being brought in at the eleventh hour. However, we will have a funeral, and bury this world's griefs and hatred on this subject, and hope that all will be well.

There is an evil practiced to a considerable extent by managers and superintendents which might as well be abolished. I refer to such officers interfering with all the little petty differences operators may have between each other over the line. In our opinion these officers have

plenty to attend to of more importance than meddling in these small matters. The operators can settle these little affairs among themselves, and, so long as they do not interfere with the business, the officers should keep out of them.

The South will soon be relieved of one of the most oppressive monopolies that ever existed. The Southern and Atlantic Company will open in Alexandria, Va., and Richmond, Va., this week, and will soon open other Southern offices. Already the reduction of rates has commenced, and soon telegraphing in the South will be as cheap as in the West and East. The Western Union Company have been fighting the Southern and Atlantic Company with all their might. They went so far as to have their linemen, between here and Gordonsville, notify and request of the farmers along the route to charge them exorbitant prices for right of way, in order to prevent them from building. There is no end to the mean things they have had to contend with, and all instigated by the Western Union Company.

The Western Union Company will remove their branch office 1st of July from near Four-and-half street to the corner of Sixth street and Pennsylvania Avenue, opposite to the B. and B. office.

The B. and B. Company have opened a branch office at Police Headquarters. Mr. M. Y. Holly, the Superintendent of Police Telegraph, will transact the business from this branch office.

Mr. Cyrus W. Field has purchased, for cash, one of the large brown stone mansions situated near the capitol, and will soon occupy it. It is the intention of Mr. Field to furnish this house at a considerable cost for a temporary residence. PERDU.

Abuses in the P. and A. Office.

CINCINNATI, O., May 21st.

TO THE EDITOR OF THE TELEGRAPHER.

I SEE my former letter has stirred up another correspondent, whose letter has shown more fully how telegraph matters and telegraph men are doing and getting along here in the city of pork. As far as I know, we of the W. U., as a majority, agree that we have nothing to complain of as to the way that company in general, and our worthy Dist. Supt. Williams in particular, treat us, and when we get into our magnificent new office, in a month or so, "everything will be lovely, and the aquatic bird will be suspended high indeed."

We still continue to hear murmurs from the P. and A. boys against such *little grievances* as being compelled to work day and night, while their worthy night manager does the loafing for them. Neither is their enterprising manager, Mr. H. L. Davis, very popular, and if I can get hold of them I will send, for the benefit of your many readers, a list of the profound and tyrannical orders which grace their bulletin board—and I assure you that if any one has a tithe of the appreciation of the humorous that I have, they will be as heartily laughed at as they were by me when I first read them. Men have to keep their feet off from the furniture in there. The boys are also talking of taking up a subscription to get some ice, for water which is totally unfit to drink without, during the warm weather we have been having—for it seems this company is either too poor or their manager unwilling it shall be furnished. It is a curious fact, that when some men have vested in them a little petty authority they seem to court the ill will of the men under them, rather than try to gain their confidence and friendship by little kindnesses which cost them nothing, but which are appreciated by the men none the less. The contrast is most striking between our manager, Armstrong, who is most universally liked and respected by every man who comes in contact with him, and this Dogberry of the P. and A., who is equally well disliked and detested. Let there be more consulting of the feelings and wishes of the men, and less display of a petty tyranny, and there will be a great change in feelings of men who now have to suffer in silence because there is no remedy. I said there is no remedy! Mistaken idea. There is a remedy, and none the less effective because these "chieftains" deny its efficiency. Not one of them likes a "ventilation." But in this case, "so help me gracious," I will continue to ventilate this man as long as the feelings of his men are outraged, as they have been since the end of the strike.

The base ball fever is still raging here, and the telegraph men have already played two or three match games, with the "Night Owls" still ahead.

We have been having fearful hot weather here, and summer clothing is beginning to put in a general appearance. More anon. VIRGINUS.

ANSWERS TO CORRESPONDENTS.

J. W. F., Phila.—The number of printing instruments now in use in this city, for reporting prices of gold and stocks, is nearly 800. They are worked under the patents of Calahan, Laws, and Pope & Edison. The principle is not at all like that of the "combination."

PERSONALS.

Mr. J. D. BRISTOL, formerly agent and operator at Spartansburg, A. C. and A. R. Ry., has been appointed freight and ticket agent at Tidouite.

Mr. ANDREW HAMILTON, late agent and operator at Tryonville, succeeds Mr. BRISTOL at Spartansburg.

Mr. JNO. PALEN, who has been doing the duties of operator in despatcher's office at Corry, succeeds Mr. HAMILTON at Tryonville.

Mr. GEO. BAKER, formerly operator for A. and G. W. Ry., at Corry, succeeds Mr. J. H. BERRYMAN at Tidouite, who has resigned, to locate elsewhere.

Mr. J. A. VAUGHAN, an old reliable, has accepted a situation in despatcher's office at Corry.

Mr. W. C. WRIGHT, late operator for A. and G. W. Ry., at Salamanca, N. Y., has taken charge of Oil City, Pa., office, A. C. and A. R. Ry.

Mr. A. L. CREELMAN, formerly of the Union Pacific R. R., has accepted a position as agent and operator at Patona, Ala., on the S. R. and D. R. R.

Mr. D. R. SAUNDERS, formerly of Patona, Ala., has resigned, and gone to Meridian, Miss., office A. and C. R. R.

Mr. G. C. McLAUGHLIN has been appointed station agent at Point Claire, Canada, on the Grand Trunk Railroad. He was formerly operator and freight clerk at Whitby, on the same road.

Mr. J. S. WORTHINGTON, late of the Chillicothe (Missouri) *Spectator*, and formerly in the telegraph office of the H. and St. Jo. R. R., in that place, has again accepted a position in the night office on that road, at the same place.

Mr. J. S. O'NEIL, formerly of the Alabama and Chattanooga R. R., has accepted a position as agent and operator of the Selma, Rome and Dalton R. R., at Montevallo, Ala., vice Mr. J. W. Harris, removed.

Mr. E. F. SMITH, one of the proscribed Omaha strikers, has accepted a position in the Chicago, Ill., office of the Atlantic and Pacific Telegraph Company.

Mr. O. H. PALMER, Treasurer of the Western Union Telegraph Company, accompanied by his family, sailed for Europe on Wednesday of last week, in the steamer "Nebraska," and will remain abroad until September next.

THE TELEGRAPH.

(By Cable.)

RELINQUISHMENT OF EXCLUSIVE TELEGRAPH CONCESSION.

PARIS, June 17th.—The French Cable Company have relinquished the monopoly conceded to them of landing cables on the coast of France, in exchange for the right of amalgamating with other companies.

ELECTRIC UNION.

MADRID, June 20th.—In the Cortes this morning Senor Rivero submitted a project for a submarine telegraph cable, to be laid from Spain to the Balearic Islands.

THE WEST INDIA CABLE.—ARRIVAL OF THE DACIA.

HAVANA, June 20th.—The English steamship Dacia, with the new West India cable on board, has arrived at Porto Rico after a pleasant passage.

Sir Charles Bright, one of the originators of the new enterprise, was a passenger. The laying of the cable between St. Thomas, Porto Rico and Jamaica, will begin immediately.

ADDITIONAL TELEGRAPHIC FACILITIES TO IRELAND.

LONDON, June 21st.—In the House of Commons last night the Postmaster General promised an early increase of facilities for telegraphic communication with Ireland. Additional cables would be laid and improved connections established.

ORIGIN OF THE REPORT OF THE LOSS OF THE DACIA.

LONDON, June 21st.—Midnight.—After a thorough investigation, which was stimulated by the heavy reward offered, it has been discovered that the hoax concerning the loss of the steamer Dacia, of the Central American Telegraph Company, originated in London, and not in Baltimore, as was at first stated.

NOTE.—The despatch announcing the loss of the steamer Dacia was filed in the Baltimore office of the Western Union Company for transmission to London by cable, as has been previously stated in THE TELEGRAPHER. It may have been concocted in London originally, but it was certainly communicated to LLOYDS from Baltimore before being published there.—[EDITOR OF THE TELEGRAPHER.

HAVANA, June 22d.—Dates from Jamaica, of June 14, are received. The steamer Dacia, carrying the West India and Panama telegraph cable, which touched at Porto Rico a few days ago, sailed for Jamaica. While entering the harbor of Kingston she grounded. A British war steamer unsuccessfully attempted to haul her off. She was being lightened.

Consolidation of Cable Interests.

AN agreement has been entered into between the China Submarine Telegraph Company and the Great Northern China and Japan Extension, which may be welcomed as a further illustration of the desire that is now manifest of preventing direct competition in submarine cables. Both companies intended laying a submarine cable between Shanghai and Hong Kong; under this agreement the latter company will lay their cable as originally proposed, but the China Submarine Company will not extend their system beyond Hong Kong. The following are the most noteworthy points in the agreement: the Northern (unless prevented by accident), before October, 1870, is to construct and ship a submarine cable to connect Shanghai and Hong Kong, of the quality as to insulation and capacity for traffic set forth in the specification. The whole district between Hong Kong and Shanghai to be treated as a neutral district, both as to land and sea line. The Northern to connect Hong Kong by direct telegraph by sea or by land, with the treaty port of Amoy, at latest within one year after the China have laid their line from Singapore to Hong Kong. The Northern to extend their line to Japan before the end of 1872. The Northern, at their own expense, to maintain and keep in good working order the Shanghai cable, and in case of interruption or accident, repair the same with all possible expedition, and provide, maintain and repair the land lines for connecting the Shanghai cable with the several stations. The Shanghai cable to be worked in an efficient manner at the expense of the Northern. A suitable building at Hong Kong to be purchased, &c., as a joint station, with separate receiving offices, all expenses to be equally divided. The gross receipts arising in each year from the Shanghai cable, including the proportions of through traffic attributable to the Shanghai, subject only to the deduction mentioned, to be divided equally between the two companies. Before such division £15,000 to be deducted and allowed to the Northern, in respect of the expenses of construction, working and maintaining the Shanghai cable. The tariff to be agreed upon from time to time. The agreement to continue for 30 years.—*Mechanics' Magazine.*

Exclusive Cable Privileges.

THE French Government has officially notified the United States Government of the relinquishment, by the French Cable Company, of that clause of its concession which confers upon it the exclusive privilege of landing telegraph cables from this country upon the French coast, and has formally applied for permission to land the cable of that company at Duxbury, which will be granted, as a matter of course. The permission under which the cable was landed and has heretofore been worked was only temporary, pending diplomatic arrangements between the respective governments.

Opposition Telegraph Lines in Canada.

THE Dominion Telegraph Company have resumed the construction of their contemplated lines, and expect to have 500 miles in operation next month, and by November some 300 miles more added. The People's line is finished from Quebec to Montreal, and is now under construction to Ottawa. The two companies have come to an arrangement about their respective territories and will soon connect with one another.

New Telegraph Company in Iowa.

THE Hawkeye Telegraph Company are at work on their line from St. Louis, Mo., to St. Paul, Minn., through Iowa. This company already have a line in operation from Alton to Marshalltown, and the poles are being set to Grinnell, Iowa, a distance of about ninety miles. The Hawkeye Company is under contract to connect with the Great Western, of Chicago.

Progress of the Southern and Atlantic Telegraph Company.

THE workmen of the Southern and Atlantic Telegraph Company are engaged putting up poles in the city, and the wires will be extended to this place by the middle of next week. There is a promise of lively competition between the two lines, and rates will be as low as any one could ask, at least for three or four months to come.—*Richmond State Journal.*

FOREIGN TELEGRAPHIC NOTES.

ADVICES from the city of Mexico, of June 17th, report that the construction of the telegraph in the northern part of Tamaulipas has been interrupted, and no news from that part of the country is being received.

The Marseilles, Algiers and Malta cable is approaching completion, the major portion of the Marseilles and La Calle section being nearly finished. This cable, as well as the China Submarine and the Australian cable, is insulated with Willoughby Smith's improved core, whereby the induction capacity is greatly reduced.

The British Indian Submarine Company reduce their tariff immediately on the opening of the Falmouth, Gibraltar and Malta cable. Since the accident which occurred to the Malta and Gibraltar section took place and was repaired everything has been going on smoothly. The Malta and Gibraltar section was completed May 26th, and a few days after, on Mr. Latimer Clark's certificate that it was in perfect condition, it was handed over to the company for traffic. The shore end of the Lisbon section was laid a few days after, and paying out was proceeded with, and at noon on the 30th ult. the expedition was off Cape St. Vincent, about 75 miles from Lisbon; this section was finally completed on May 31. The "Ibernia," with the entire amount of the Lisbon and Falmouth section, was at the mouth of the Tagus, ready to commence paying out so soon as the Gibraltar section was finished.

During the week ending May 21 there was a decrease of 7,634 messages on the British Government telegraph lines.

It is intended that Kingston, Jamaica, shall be the central station of the West India and Panama Telegraph Company's system. The erection of the land lines is being rapidly proceeded with. The whole of the cable has been manufactured and forwarded to its destination.

President Sarmiento, in his address to the Congress of the Argentine Confederation, on the 15th of May, stated that in the Confederation 816 miles of telegraph were working, 1,000 miles additional were under construction, and the cable across the Parana would be laid in a few days, and it was intended to connect with the Brazilian lines and through them with the telegraph system of the world.

TELEGRAPHIC BREVITIES.

THE Great Western Telegraph Company have completed setting poles from Chicago to Peoria, Ill., and the wire will be strung by the time this is published. The line will be extended from Peoria to Pekin, and thence down the Illinois River to St. Louis, Mo., making a second route for that company from Chicago to St. Louis. The other route is via Springfield, on which the wire is also being strung.

On Monday morning last the lightning struck the telegraph office at Buckport, Maine, destroying the instruments and setting fire to the papers lying about. The telegraph poles along the road were much shattered and the lines worked with great difficulty.

Wanted, to Complete a Volume.

ANY reader who may have a spare copy of No. 44, of Volume V, of THE TELEGRAPHER, and will forward same to the Editor of this paper, will confer a great favor on a subscriber, who desires to obtain it to complete his file of the paper.

An Agent for the Telegrapher.

Mr. THOMAS J. RODGERS, of the Fire Alarm Telegraph office at New Orleans, La., has kindly consented to act as agent for THE TELEGRAPHER in that section of the country. We commend Mr. Rodgers to the favorable consideration of our Southern friends, and hope that they will cooperate with him in securing a general support of their organ by the telegraphic fraternity South.

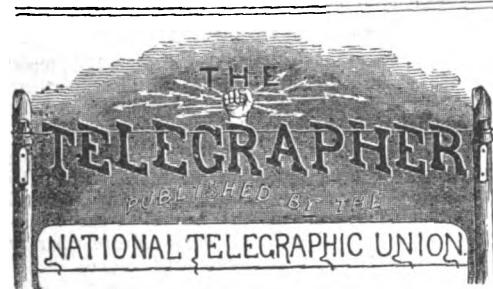
Recent British Patent.

No. 1,301.—WARREN THOMPSON, Cloak Lane, London. Improvements in apparatus for recording electric telegraph signals. Improvements protected for six months on the deposit of complete specifications.

MARRIED.

MANNING—DEVINE.—In Cleveland, O., on the 15th inst., by Rev. J. V. CONLAN, assisted by Revs. E. MEARES and J. F. GALLAGHER, Mr. WM. A. MANNING to Miss MARY A. DEVINE.

TUTTLE—CARPENTER.—At the M. E. Church, Illon, N. Y., Wednesday evening, June 15th, by the Rev. M. S. HARD, H. A. TUTTLE, of Oswego, to Miss AMANDA CARPENTER, youngest daughter of CHAS. W. CARPENTER, of the above place.



SATURDAY, JUNE 25, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D.C.
 Vice-President W. O. LEWIS....New York.
 Treasurer.....A. L. WHIFFLE...Box 39 P. O., Albany, N. Y.
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CONSOLIDATION AND REFORM OF INDEPENDENT TELEGRAPH LINES.

We have already alluded to the signs of progress recently manifested on the part of managers of telegraph companies outside of the mammoth Western Union corporation. The policy of consolidation and concentration of effort which we have steadily advocated appears likely soon to be generally adopted by these companies. Their managers realize the suicidal tendency of the policy heretofore pursued, and are, we believe, honestly working to supplement it by a policy more in consonance with the dictates of common sense and sound business principles. By a practical business consolidation, if no more can now be effected, they will be enabled to considerably reduce working expenses, and at the same time afford greatly increased business facilities, and augment the capacity of their several lines for the transmission of despatches.

Nothing has been more assuredly established than that the public will not submit to a monopoly of the telegraph business of the country by any private corporation. Whenever such a monopoly was likely to be established sufficient funds have invariably been furnished for building new lines, notwithstanding the amount of capital which has heretofore been sunk in such enterprises. Let it but be settled that such a monopoly was inevitable, and the demand for a Government control of the business would furnish the element, lacking which the efforts of the postal telegraph advocates have failed to produce any considerable effect.

Firmly believing as we do that the interests of the people, the Government and the profession, will be better served by a continuance of the telegraph as a private enterprise, if there be reasonable competition in the business, we have consistently opposed the attempts to impose upon this country a Government administration of the telegraph—and in the interests of the public and the profession we have as consistently advocated such a competition. The time has, however, gone by when short and isolated telegraph lines are practicable. To maintain the status of the competing lines of the last few years is to insure their ruin and destruction, one after the other. Under these circumstances a combination is not only the dictate of common sense but of future self preservation and success.

We believe that a class of men are now interested in this enterprise who combine the qualifications requisite to insure success. With ample capital, and great business experience, they possess in addition the advantage of coming into the business free from the jealousies and rivalries which have hitherto prevented the desired combinations. Their success in other and more weighty business enterprises gives assurance that in the administra-

tion of the telegraph they will be governed by the sound business principles which have insured success in those enterprises. They need, however, to study carefully the situation of affairs and conditions of the several lines, in order that further expenditures may be wisely made, so as not only to add new facilities, but to bring to the highest point of efficiency those already established and in use. Additional wires and new routes will unquestionably be required, but those already in use can be made much more efficient, and in most cases can be made to do double and treble the work now performed on them. Such being the case, the first step to be taken is to put these lines in a condition to do this work. The great defect of all telegraph lines, in this country at least, is defective insulation. In our paper for June 11th we set forth at some length the defective character of insulation in use on the Western Union and most other lines. The glass insulators so generally adopted are truly a disgrace to telegraphic managers. It has been styled, and justly, a "relic of (telegraphic) barbarism." Insulation is the most vital point to be considered in the improvement of the telegraph. Glass insulation should be at once and forever discarded, and the best possible insulator be sought for and adopted. That such an insulator can be supplied at the price of glass insulators cannot, of course, be reasonably expected. In fact, it is the initial cheapness of glass insulators which have made them the favorite of contractors and others, who seek to make money out of construction. We have no hesitation in asserting, however, that if supplied for *nothing* they are the dearest that can be adopted. No insulator should be used which the manufacturer or seller will not guarantee to maintain a certain standard of insulation in all weathers.

Another difficulty and defect in the working of the lines is in the want of adaptation of the magnets used in the relays, sounders, etc., to the service to which they are applied. Some of them have too much and others too little resistance. Every wire and instrument used should be carefully tested by an experienced electrical and telegraphic engineer, and adapted to the service which it is expected to perform. Wires which could be worked successfully only under the most favorable circumstances, by a reform in this respect have been made to show good results.

Much trouble is also frequently caused by the manner of running office wires, and in making connections which can be developed by careful testing, located and removed.

These are a few points which should receive immediate attention on all telegraph lines, if it is desired that their working should show good results, with a possibility not only of defraying working expenses but of affording dividends to stockholders. We commend them to the consideration of the gentlemen who are now seeking to make the competing telegraph lines a practical and financial success.

Out of the Depths.—A Good Move.

THE operating department of the Franklin and Atlantic and Pacific Telegraph Companies has been transferred from the basement of No. 11 Broad street to a new office on the fourth floor of the same building. The Pacific and Atlantic wires are also carried into the same office, thus concentrating all the independent lines in one main office. We shall publish a description of the new office as soon as all the arrangements and improvements are completed.

This is a good move, for a more unsuitable place for the occupation of so many persons as are employed in this office could not well be found than the basement from which they have now removed. We congratulate the companies and their employees on this great improvement in their accommodations and surroundings.

The receiving and delivery departments will continue to occupy the old quarters, which are to be fitted up especially for their accommodation and that of Superintendent J. G. Smith, of the Franklin Company.

That Steel Wire Again.

THE readers of THE TELEGRAPHER will recollect that some months since we published several communications from "Bear Valley" and "Grass Valley," from California, relative to a quantity of steel wire purchased for the use of the Central Pacific Railroad Co. for telegraphic purposes. The entire unfitness of steel wire as a conductor of electricity, for telegraphic purposes, is well known. It was asserted by our correspondent "Grass Valley," that this wire was to be used in certain exposed localities, where it would be difficult to maintain ordinary wire, or American compound wire, on account of the violent storms which prevailed there at certain seasons of the year.

We have recently received a specimen of this wire, which, we are informed, is mostly strung out of the snow line and in the snow sheds, and not an inch of it in an exposed situation. Of course, such lines cannot work well. 150 cups of battery are required at Sacramento, and 75 at San Francisco, to do similar work to that formerly done on the A. & P. States line with 18 cups. A very careful test of this wire shows a resistance of 63½ ohms to the mile. The resistance of ordinary No. 9 iron wire is about 18 ohms to the mile. Comment is unnecessary, but we would advise the Central Pacific Railroad Company to get rid of this wire without delay, and substitute something that will enable them to do their work efficiently and economically.

Worthy of Patronage.

RUSSELL BROTHERS, proprietors of the American Steam Printing House at Nos. 28, 30 and 32 Centre street, are deserving of the patronage of those who desire to have printing done with neatness, accuracy and despatch. They have printed THE TELEGRAPHER for nearly two years and a half, and we consider the paper, in its weekly issues, a very creditable specimen of typography. Telegraphic printing, such as message blanks, forms, etc., is a specialty with them, and has been for years, and a very large proportion of the telegraphic printing of the country is done by them. They also do a large amount of railroad printing; and we can conscientiously commend them to our telegraphic and railroad friends as eminently worthy of patronage.

By the way, we notice that the colored gentleman who labored so industriously in turning the crank which apparently runs the machinery of the establishment, has been taken down from his elevated and exposed situation at the Centre and Reade streets corner. RUSSELL says it is to afford him a rest, and for the purpose of giving him a new suit of clothes, but we suspect the real reason is to preserve him from the too ardent demonstrations of his natural enemies, the denizens of the Sixth Ward, during the coming Fourth of July festivities.

Packard's College Journal.

WE have received the first number of "A monthly Educational and Literary paper, for general circulation," entitled *Packard's College Journal*, the publication of which has been commenced by our friend, S. S. PACKARD, the proprietor and originator of *Packard's Monthly*. It is mainly devoted to the interests of Mr. PACKARD's Business College, but contains much readable and interesting matter. As an Editor, and as the Manager of a first class Business College, PACKARD is a decided success, and deserves the prosperity which, by industry, tact, talent and perseverance, he has attained.

Gamewell's Fire Alarm Telegraph.

MR. J. W. STOVER, contracting agent for Gamewell & Co., has closed a contract with the municipal authorities of Syracuse, N. Y., for the introduction of the American system of fire alarm telegraph in that city. The appointments of any place which aspires to a higher dignity than that of a village are incomplete without Gamewell & Co.'s fire alarm telegraph.

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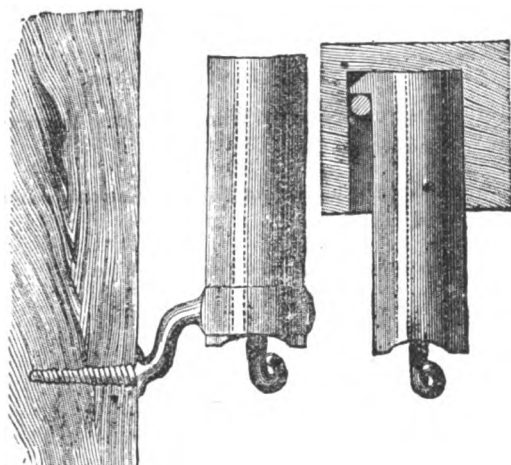
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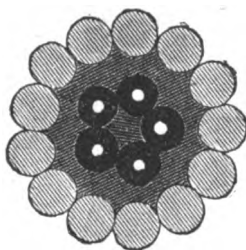
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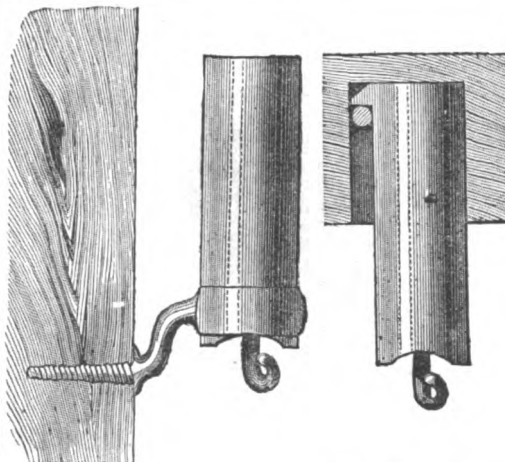
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"THE TELEGRAPHER"

to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to

INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES AND INJUSTICE practised by them upon its employees, have announced that

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Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

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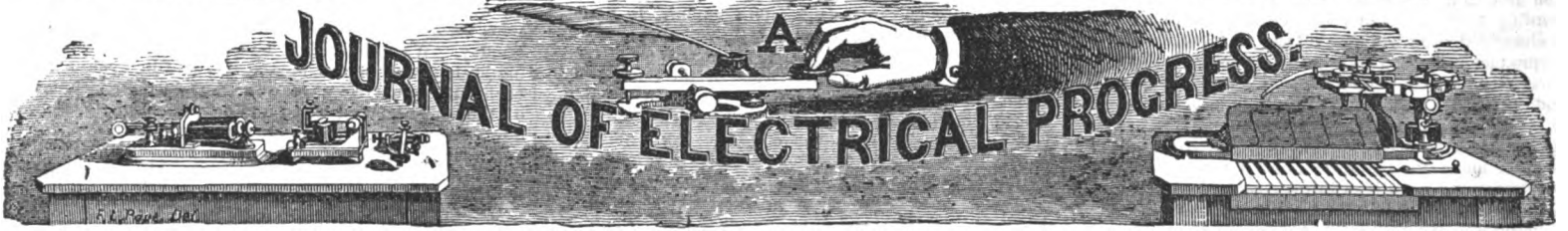
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THE TELEGRAPHIC.



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New York, Saturday, July 2, 1870.

Whole No. 207.

ON THE WORKING CAPACITY OF TELEGRAPH LINES.

BY DAVID BROOKS.

If we take two wires of the same metal, and of equal length, one of which is twice the weight of the other, the apparent difference in their sizes will not be great, and it is somewhat difficult to realize that the latter has twice the capacity of the former for the conduction of electricity, yet such is actually the case. Again, if we take two wires of the same metal whose weight per foot is the same, one of which is one foot and the other two feet in length, we find that the shorter wire has twice the conducting power of the longer one, or conversely that the electrical resistance of the longer wire is twice that of the shorter.

If a wire of any given diameter, and one foot long, is drawn out to a length of two feet, its length will be doubled, while its weight per foot will obviously be halved. Hence its conducting capacity or conductivity will be but one fourth of the original amount. We find, therefore, that the conductivity of a given weight of wire becomes reduced as it is lengthened in the ratio of the square of its length.

Applying this principle to the case of a telegraph line, we will suppose its length to be 100 miles, and the conducting wire to be of the size known as No. 8. We can get an electrical current of equal strength from the same battery through a wire 200 miles in length if we use a No. 4, or wire weighing twice as much per foot as the No. 8. We have made no allowance in this case for leakage at the insulators or supports. This relation could be preserved by doubling the distance between the posts so as not to increase their number.

In order to secure the best result in the working of a telegraph line we must make the resistance as small as possible in the route through which we wish the electricity to travel, and as great as possible in every other direction, that is to say, we must keep down the resistance in the conductor, and increase it in the insulation to the greatest practicable extent. The practical value of a telegraph line is the difference or margin between the joint resistance of the conductor and the insulation and that of the insulation alone. This difference is in all cases shown by the tension of the spring of the relay magnet, when upon what is termed a "working adjustment." It will be evident, from what has been said, that this margin may be increased by either of two methods, viz:

1. By increasing the resistance of the insulation.
2. By decreasing the resistance of the conductor; or, in other words, by increasing its conductivity.

For example, we will take a line of telegraph 100 miles in length—the weather being rainy. Suppose that the conductor has a resistance of 20 units per mile while the resistance of the insulators is 1,000,000 units per mile. Let the receiving magnet and battery be situated at one extremity of the line and the key at the other. When the key is closed, the force acting upon the armature of the magnet is in proportion to the quantity of electricity leaving the battery and passing through the magnet to the line, and this quantity is made up of that escaping through the insulation along the line, in addition to that going through the conductor to the other end of the route. When the key is open the force exerted upon the armature is due to the current passing through the insulation alone. The effective working strength is therefore the difference between the attractive forces acting upon the armature, when the key is opened, and when it is closed at the other end of the line—or in other words we may say that the working margin is the difference between the sum of the forces due to the joint conductivity of the wire and insulators and that of the insulators alone.

Thus, in the case cited:

The total resistance of the wire is.....	2,000 units.
" " " insulation.....	10,000 "
The joint resistance of wire and insulators is.....	1,666 "
The strength of current being inversely proportional to the resistance, it will be as follows:	
When key at other end is closed.....	100.00
" " " " open.....	16.66
Difference, or effective working margin.....	83.33

It is not the absolute resistance of the conductor or of the insulators that determines the value of a line. It is operated by the margin or difference between these two values. It is important that this should not be lost sight of.

Now let us observe the effect of substituting a wire of twice the weight, having a resistance of only 10 units per mile. We now have:

Total resistance of wire.....	1,000 units.
" " " insulation (as before).....	10,000 "
Joint resistance.....	909 "
The proportionate strength of current will become:	
When key is closed.....	100.00
" " " " open.....	9.09
Difference.....	90.93

We have given the strength of current with key closed as 100 in both the above cases, in order to show the proportionate increase of margin. The absolute strength of current in the two cases is as 100 to 183, an increase of 83 per cent., while the increase of working margin is only 9 per cent.

We will now look at the result of an actual measurement. A new No. 9 galvanized wire, 115 miles in length, on a clear and fine day, gave a resistance of 2,400 units, or about 21 units per mile. On the same poles was a No. 10 plain wire, which had been in use nineteen years. This wire, including eight instruments in circuit, gave a resistance of 13,300 units. In a rain the insulation resistance of the good wire measured 15,300 units, and the bad wire 19,650.

The joint resistance of the good wire and its insulators was 2,077. The proportion of current escaping by the insulators was to the whole current as 13.51 to 100, giving a margin to work on of 86.49.

The joint resistance of the bad wire and its insulators was 7,982. The proportion of escape to the whole current was as 40 to 100, giving but 60 per cent. as an available working margin. This wire could not be worked except when the other circuits on the same poles remained idle, either closed or open. The good wire was worked without difficulty. The escape was apparent, but was not sufficiently great to cause any serious inconvenience. The relative working margins were in the proportion of 86.49 to 60.

On a clear and cold day the insulation of the good wire showed a resistance of 2,400,000 units, the working margin being 99.99. The bad wire showed an insulation resistance of 1,700,000 units, the working margin being 99.93. The difference in this case between the two wires was only 00.06, an amount not appreciable in practice. The poor wire worked as well as the good one, but the current was not so strong. This difference could be compensated for by increasing the battery on the former.

In the above instance we have two wires on the same poles. One is new and a good conductor, the other old and a poor conductor. In fine weather the insulation of the new wire is the most perfect, but the difference in their working is inappreciable. In rain, although the insulation of the old wire is actually the best, yet it does not work nearly so well as the new wire, and this is attributable solely to the fact that the new wire has a much greater conductive capacity.

Take another example, also from actual measurement: A new wire, 105 miles in length, on a clear day gave a resistance of 2,200 units. On the same poles was an old rusty No. 11 wire, which gave a resistance of 23,500 units. On a very wet day the insulation resistance of the new wire was 4,800 units, and of the old wire 32,000 units. The working margin of the new wire was 78, and that of the old wire 60. In this case the amount of current escaping over the insulators of the new wire was 2.7 times that passing through the old wire and its insulators combined! In other words, the current with key open on the new wire was nearly three times as strong as on the old wire when the key was closed.

In these examples the resistance of the batteries and instruments has not been taken into account, as they do not materially affect the results.

The writer has known instances where a new wire has been put up and worked as a "through circuit," its apparent insulation being judged of by comparison with an old "way wire," with as many as twenty instruments in circuit, having a resistance varying from 100 to 1,000 units each. The utter fallacy of such a comparison, as far as insulation is concerned, is well seen by the two examples given above. It is in point of fact simply a comparison of working margins, giving no indication whatever of the absolute value of the insulation of one circuit as compared with the other. It would, in the case just mentioned, have been far better to have used the old wire for the "through" and the new wire for the "way" circuit, thus in some measure compensating with new wire of good conductivity the resistance of so many instruments.

(Concluded next week.)

Electrical Phenomena and Theories.

On Tuesday, June 2d, Prof. Tyndall delivered his sixth lecture on "Electrical Phenomena and Theories" at the Royal Institution, London. He pointed out how the metal zinc is virtually "burnt," or made to enter into combination with oxygen, in the cells of the Grove battery—the consequence is that the temperature of the liquid in the battery cells is raised. If both ends of the battery be joined by a very thick copper wire a definite amount of heat is produced in the cells; but if a thin platinum wire be placed in the circuit, so that the said wire shall be made red hot by the current, there is no additional creation of heat, for the temperature gained in the wire is compensated for by less heat generated in the battery cells. He also explained that when an electrical current raises the temperature of a wire it thereby creates increased resistance to its own passage through the wire, for the cooler the metal the more freely does the current pass. To illustrate this Professor Tyndall passed a current from a forty-cell Grove battery through a fine platinum wire, rather more than a yard long; the result was that the wire became red hot. He then took this red hot wire by its two ends, with the current still passing through it, and held it so that it hung in a curve like the letter U, and he let the bottom part of the U curve sink slowly into a glass vessel full of water. The result was that the water quenched the redness of the wire, whenever the wire was immersed, and the current then passed more freely through the cooled portions; this of course increased the heating action of the current upon those portions of the wire which were not immersed in the water, so that they became white hot, and, after glowing brilliantly for a time, were fused by the intense heat. The lecturer explained how some metals conduct electricity much better than others. For this purpose he joined up short lengths of platinum wire and silver wire of the same thickness, so as to form one long wire, and then he passed a powerful galvanic current through the whole arrangement. The platinum lengths then became white hot, because of the resistance they offered to the passage of electricity, but the silver

lengths remained quite cold and dark, because their good conducting power permitted the current to pass freely. In this lecture he also showed how two wires through which a current of galvanic electricity is passing will, when free to move, visibly attract or repel each other, according to the direction of the current through each. An electrified wire will also attract or repel the electric arc produced by the passage of an electrical current between two carbon points. To illustrate this Professor Tyndall placed a little lump of silver in a hollow on the top of the lower carbon of the electric lamp. When the upper carbon was permitted to touch the silver the current soon made the metal boil, and when the carbons were separated a little, a brilliant arc of bright green silver vapor extended between the points. A bright image of this arc was projected upon the screen, by means of the lenses of the lamp, and when a wire through which a galvanic current was passing was brought near the arc it was seen to attract it in a remarkable manner. In fact it could be made to draw the arc of luminous vapor so far on one side as to break it, and to extinguish the light altogether. Professor Tyndall also called attention to the fact that when frictional or galvanic electricity is passed through one wire it will induce currents of electricity in another wire lying near, but not touching the first one. He placed one flat coil of insulated wire on the top of another flat coil of insulated wire; then, on passing the discharge from a Leyden jar through the first coil, the electrical current produced in the second one was so strong that it set fire to gun cotton placed between the terminals of the secondary coil. In another experiment he showed that these effects may be produced when the two coils are a considerable distance apart, and he repeated the experiment after first separating the two coils to the distance of eight or nine inches from each other.—*Mechanics' Magazine.*

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., June 19.

TO THE EDITOR OF THE TELEGRAPHER.

THE incorporators in the bill authorizing the Bermuda Telegraph (Cable) Company, reported to the Senate June 22d by Mr. Sumner, from the Committee on Foreign Relations, are: Alexander Hamilton, Jr., David Henry Haight, John Jacob Astor, Robert J. Livingston, William Curry, William G. Fargo, James T. Sanford, John Bigelow, William T. Blodgett, James A. Scrymser, George L. Schuyler and William Farrar Smith. They and their associates, &c., are authorized to lay, work and maintain telegraphic submarine cables between the coast of the United States and the Bermuda islands, subject to any previous grants by Congress, and to such general laws as Congress may establish for regulating telegraphic intercourse with foreign nations, &c., provided that no exclusive privileges shall be obtained for landing such cables on the islands of Bermuda.

The corporators in the Belgium cable bill, reported at the same time, are Robert Squires, Lyman Tremain, Erastus Corning, W. Isaiah Blood, Hiram Barney, George W. Riggs, J. H. Lathrop, George Harrington, William C. Barney, Jos. J. Bartlett, John N. Merriam and James B. Hubbell. They are authorized to lay, work and maintain cables between the United States and Belgium, subject to the same restriction as in the Bermuda cable bill.

On Friday, June 24th, Senator Ramsey introduced a bill to establish a transatlantic postal telegraph service by American cables, which was referred to the Committee on Post-offices.

The New York, Newfoundland and London Telegraph Company (Atlantic Cable) and the International Ocean Cable Company (Cuba Cable) seem to have engaged in a very bitter quarrel, and are very earnestly at work trying to circumvent and damage each other's projects before Congress.

On Monday, June 20th, Mr. Bayard presented to the Senate the memorial of Wm. F. Smith, President of the International Ocean Telegraph Company, proposing for \$500,000 a year, for twenty years, to be paid by the United States, to establish and maintain international telegraph cables from San Francisco to Japan and China, and a third line from the United States to Europe, conditional upon never consolidating with any existing transatlantic cable, and never charging more than \$5 in gold for each message of ten words. Referred to the Committee on Foreign Relations.

Mention of this memorial was accidentally omitted in my last week's letter:

On Friday, June 24th, a memorial of the Florida Telegraph Company was presented to both houses, praying Congress to repeal the exclusive right granted, in 1866, to the International Ocean Telegraph Company, to connect Florida with Cuba, and offering in such case to lay cables and transmit messages between the same points at one half the lowest rates charged by the International Ocean Telegraph Company, and not to discriminate against European business, as is now the case with that company. They allege the company has forfeited all claims by their excessive charges and discriminations. They say, as one of the grounds for their request, that Congress reserved the right to alter, repeal or amend the act at any time, and to regulate the tariff. The memorial was referred, in each house, to the Committee on Foreign Affairs.

On Tuesday last Mr. Edward A. Dickinson, of New York, appeared before the Senate Committee on Foreign Relations and urged the repeal of the charter of the International Ocean Telegraph Company, charging that it had been violated by the charging of exorbitant rates for the transmission of messages over its lines; Mr. Cyrus W. Field, who was present, endorsed Mr. Dickinson's statement. What is sought is the repeal of the exclusive right to lay cables between Cuba and the United States, so as to throw the business open to competition.

All of these movements, and others which have been before mentioned in my letters, grow out of the quarrel between these two companies. As to the merits of the case I am not informed, but it is certainly difficult for an outsider to understand what ultimate advantage can accrue to either of these parties by these efforts to injure and destroy each other's property and franchises. It seems to me that if they are wise they will compromise their difficulties as soon as possible, otherwise Congress may credit their statements in regard to each other, and take some action at the next session which will have a damaging effect upon all concerned.

The weather is untimely hot here, and life at the capital anything but pleasant or comfortable. We are all anxiously looking for the 15th of July, when we hope to be released from the sweltering heat, and allowed to bid the capital, Goose Creek and the canal farewell, until the bracing air of December renders them more tolerable. CAPITOL.

The Morse Testimonial.

PITTSBURG, June 20.

TO THE EDITOR OF THE TELEGRAPHER.

SINCE the attempted banishment, by the Western Union officials in this city, of all who were thought favorable to THE TELEGRAPHER, and among its correspondents, very little has appeared relative to the status and feeling of the fraternity in this place, which has hitherto occupied such a prominent position before the telegraphic world; but, like Banquo's ghost, the correspondents of THE TELEGRAPHER "will not down;" no sooner is the latest decapitated than another, "phoenix like, arises;" the reason being simply this: "Truth crushed to earth will rise again." Occupying so important and central a position as a repeating station between the East and the West, and the managers of the Western Union Company being a peculiar class, who for years have made it their study how to draw the reins and crack the whip over the lacerated backs of the over-worked and poorly paid employees, much is transpiring here which is especially interesting to all those having the welfare of the fraternity at heart. We propose, therefore, to give free ventilation of our views in some subsequent communications during the course of our peregrinations in this the celebrated "Smoky City."

At present we desire only to make mention of a few facts concerning the proposed "Morse Testimonial," originating (accidentally, of course,) in the "fertile" brain of Mr. R. B. Hoover, of this city—a man heretofore unknown to the fraternity either as a gentleman, scholar, or an expert in his profession. This idea was at once seized upon by the Western Union Company as a means of winning popularity and allying their employees more closely to their service. At once an executive committee is self-appointed, with the said Mr. Hoover as Secretary, thereby completely satisfying his lust for ambition, and affording him a slight recognition from his superiors as one of the faithful whom the company propose rewarding for their fidelity in the hours of their great trials and tribulations.

A word in regard to this Mr. Hoover. He was elected a member of the Protective League, his initiation fee paid, and on the Sunday immediately preceding the strike came voluntarily to the League room for the sole purpose of being sworn in.

At this time very slight intimations were received of difficulties in California, and were being discussed by the

members at the time of Mr. Hoover's appearance. Mr. H. heard enough to make him pale and his knees to quake. When ready to administer the obligation, Mr. H., with considerable tremor and embarrassment, managed by various incomplete sentences to inform us that he was a Christian (Heaven forbid), and that conscientious scruples prevented him from taking the oath on Sunday. We insisted, but he as often declined, promising faithfully to come the next day and be made a member in due form. He never came, but during continuance of the strike labored night and day, unceasingly, to beat down the very ones he was to support. Pleading poverty, and a large family to support, he refused to come out when requested by the League, but expressed himself "willing to contribute pecuniarily to our success," and that "his sympathies were with us, and trusted no violence would be done him," which he felt perhaps that he richly deserved.

This is the character of the man who undertakes to immortalize himself by proposing the presentation of an elaborate testimonial to the genius and worth of our time-honored and highly respected friend, Prof. Morse.

We revere Prof. Morse, and attach a glory to his name that has been reached by but few men of genius, but in all candor we must certainly protest against the manner taken to bring about this sensible expression of the gratitude felt for the renowned inventor. The character of the originator of the plan is despicable, and held in contempt by those who know his record. Then the efforts of the Western Union magistrates to prevent other than Western Union employees from contributing to the fund is too plain to be misconstrued. Considering these facts, can the testimonial appear in any other light than obnoxious to Prof. Morse, and can he help but see that it has been a forced and not voluntary expression of gratitude to his memory? Neither is it the universal testimony so much deserved. Opposition operators are giving comparatively nothing to this fund, owing to the character of the men in charge of it and the attempt to make it strictly Western Union in its character. We thank you for a hearing, and promise in a very few days to give you some rich morsels from this part of Stager's vineyard. DIVAN AND DRAGON.

The Present Condition of Telegraph Operators and its Remedy.

TO THE EDITOR OF THE TELEGRAPHER.

THAT something in the body politic of operators is wrong, internally, will hardly be questioned. It is too palpable to admit of doubt. The late commotion between employer and employé, resulting so disastrously to the latter, continual complaints through their organ, and most evident of all, the startling rapidity with which the best and most reliable are leaving the profession, point vividly to this undeniable fact.

It is a safe maxim in commercial economy never to leave a paying business except for one destined, beyond cavil, to pay better.

Self-interest with each, paramount to all other considerations, generally commands a strict adherence to the above rule, and the fact that there are found those who, one after another are leaving any of the great employment in life in which they are prominently engaged, may be regarded as certainly establishing the postulate with which this article was opened.

Let us, then, calmly examine the facts in the case, and see if a remedy can be found, since nature, in her allwise providence, has left no evil without an antidote.

Laying aside personal or private reasons, as they can have no bearing on the question at issue, there are two most prominent upon which we can safely argue. First: Uninsufficient remuneration. Second: A seemingly poor prospect for the future, judging from present examples. The cause of these can be stated in one word—ignorance.

Men are like water, sure to find their level; so are wages.

It was a most salient truth of a celebrated political economist, "that if, having a million of men, each receiving two dollars per day, you so educate them as to be worth three dollars for the same time, you add a million of dollars to the wealth of the State," which increased remuneration laborers themselves would receive, at least indirectly, and in nine cases out of ten in person, that, to a superficial observer, the prospects of the telegraphic profession are poor, is very true.

The ambition of every man (the noun is here used in the sense of the latin *homo*, a man or woman) is to be come a Superintendent, and, if possible, by owning stock, to have a voice in controlling the company he represents. But they, too, are poorly paid. Not one in a large proportion but could, if he would but place confidence enough in himself and make the effort, do better by far, financially, than administering the affairs of a telegraph company; but, educated thus—their position gained after years of hard and faithful labor—and the habit of looking for a regular salary, meagre though it be, has unfitted

them for a struggle with life, and they go listlessly on in the old beaten track, seeing in many instances agents and others, not occupying official positions, receiving more than themselves. This is especially the case with railroad telegraph managers. Then there is the inborn desire of every one having a manly stature to be his own master; this is most laudable, and to one who has not examined closely, seems nearly impossible to every operator.

What, then, shall be done to better affairs? To this the reply is—educate.

In a business ultimately to hold so much of the world's prosperity in its hands, reaching forth as it will, and grasping in its wide spreading arms the entire civilized world, it is most important, nay, imperative, that each member of this vast corporation be well educated.

How shall this be best accomplished, and what will be the result? In a future communication I will submit my views as regards the solution of this important problem. OMEGA.

A Correction.

PITTSBURG, PA., June 24.

TO THE EDITOR OF THE TELEGRAPHER.

I WISH to make a very important correction of my letter of May 30th. Instead of the Pacific and Atlantic Company bringing a man here it should have been the Western Union Company. This statement I deem necessary on account of a gentleman to whom the P. and A. Company gave the management of their Pittsburgh office, which appointment is satisfactory to the employés in that office, and which is considered a good one. A. Q.

A Sensible Suggestion.—A Word to Questioners.

ALLEGHENY CITY, PA., June 22.

TO THE EDITOR OF THE TELEGRAPHER.

WHEN in a company of friends one is relating some incident, or in any manner addressing the whole company, for some one of the number, after a minute or so has elapsed, to say, "Excuse me, sir, but I did not get the first of that," every one knows to be discourteous, and also shows a lack of bright and attentive interest. What would be the condition of things at a public lecture if this "Excuse me, sir, &c.," should come in from every pretended auditor? The entire hour would be occupied in repeating "the first part of that."

In the issue of THE TELEGRAPHER for June 18 it is noticed that a new feature, to be under "Answers to Correspondents," "Queries Answered," or some such heading, will be instituted. When this comes, and you see something two or three months hence which you do not fully comprehend, don't say "Excuse me, sir, I did not get the first of that," and ask some question which has already been answered two or three times, but turn back and look it up; or better still, read it as it comes, and remember it, and don't bore THE TELEGRAPHER with the necessity of answering the same question more than once. B.

ANSWERS TO CORRESPONDENTS.

SEVERAL communications of interest, already in type, are unavoidably omitted until our next issue. We publish communications received as soon as our limited space will permit, and hope our correspondents will not get discouraged if they do not always see their favors in print as promptly as they expect.

C. D. H., Ontario.—We believe the Western Union Company now use the Grove battery for main circuits at their large offices. We do not recommend it, especially for a single wire. It is troublesome and expensive. Keep the one you have, and look well after the clamps and connections.

A SUFFERER.—The company has no legal right to collect the amount from you. If you can't afford to run the risk of sacrificing your situation, pay it under written protest. If you leave the service within five years you can collect your claim by legal measures.

C., Massachusetts.—Write to the editor of the *Journal of the Telegraph*. We cannot make any sense of the "rule," much less attempt to give an authoritative construction of it.

M. M., Pittsburg.—The trouble is on account of your insulators being covered with smoke and soot, which is a first rate conductor. No insulator will remain in good condition for any length of time in such an atmosphere. The best thing you can do is to put in Brooks, and clean them every year or two. Compound wire does not diminish in size by corrosion, as far as observed in this city.

PERSONALS.

Mr. WM. BAIRD, formerly operator at Walton, Ky., has been appointed agent and operator of the L. C. & L. R. R. at La Grange, Ky.

Mr. FRANK L. CRAFT, formerly of Eminence, Ky., takes the situation at Walton, Ky., vacated by Mr. BAIRD.

Mr. WM. KELLER, formerly of Covington, Ky., takes the office at Eminence, Ky.

Mr. BENJ. JOHNSON, of the Western Union office, Washington, D. C., left on vacation, June 27th, and will take a position in the Baltimore, Md., office on the 16th inst.

THE TELEGRAPH.

(By Cable.)

DEEP SEA TELEGRAPHY.

LONDON, June 24.—The congratulatory telegrams to and from President Grant were read amid much enthusiasm at the banquet held in this city last evening, in honor of the completion of the telegraph line to India. They are also published in the various morning journals here and elsewhere throughout Europe.

The cable across St. George's Channel to Wexford, Ireland, has been repaired, and a marked improvement in the transoceanic telegraph service has followed. The Wexford cable, besides being on the direct route from European capitals to Valentia, contains four conducting wires, while the other cables to Ireland, containing only one conducting wire, are further north, making necessary the employment of a circuitous route, with frequent repeating stations. Delays were, therefore, unavoidable. Now, however, the necessity for economizing time, by setting apart one of the ocean cables for transmitting and the other for receiving messages, no longer exists. Communication is perfect in all directions.

FOREIGN TELEGRAPHIC NOTES.

THE steamship Great Eastern arrived at Sheerness on Wednesday morning, June 9th, and was at once taken to her old moorings in the harbor. She is in excellent condition.

The report of Hooper's Telegraph Works (Limited) states that the first section, consisting of 1,098 miles of the China Cable, manufactured for the Great Northern Telegraph, China and Japan Extension Company, has been completed and paid for according to agreement, and is now being delivered to the company, by which it will be laid between Hong Kong and Shanghai during the autumn. The manufacture of the remaining 1,198 miles, being the second section for submersion between Possietta and Shanghai, will be completed before the end of the year. Out of the profits already earned, after writing off the whole of the preliminary expenses, the directors recommend payment of an *ad interim* dividend, free of income tax, of five shillings per share, being at the rate of 15 per cent. per annum on the average capital paid up to the 30th of June.

The result of the Derby was telegraphed to India by the Indo-European route, via Teheran and the Persian Gulf. The race was run at 3.23 P. M., Greenwich time, and the telegraph announcing the first, second and third horses reached Bombay at 5.57, and Calcutta at 6.25 P. M., Greenwich time, thus travelling from the Grand Stand at Epsom to Bombay in 2 hours and 34 minutes, and to Calcutta in 3 hours and 2 minutes.

The Falmouth, Gibraltar and Malta Telegraph Company have notified that on the opening of their line the charges for messages to India by the new submarine route will be reduced. Ten words to Bombay will then cost 1*l.* 17*s.* instead of 2*l.*, as at present. To Calcutta and Madras, and all parts west of Chittagong, the charge for ten words will also be 1*l.* 17*s.*, the present rate being 2*l.* 4*s.* 6*d.* To Ceylon and stations in India east of Chittagong the rate will be 2*l.* 1*s.* instead of 2*l.* 8*s.* 6*d.* For a twenty word message to Bombay it will be 2*l.* 17*s.* instead of 3*l.*, and to Calcutta and Madras the same sum, instead of 3*l.* 7*s.* 6*d.* To Ceylon it will be 3*l.* 1*s.* instead of 3*l.* 11*s.* 6*d.*

The British Channel telegraph cable has been found not to answer, and is being taken up.

Advices from Kingston, Jamaica, of June 16th report the Steamer Dacia, of the Panama and West Indian Cable Company, as still aground. She was being lightened. There are about fifty operators at present located at Kingston, waiting distribution among the telegraph stations on the other islands.

Bank Alarm Telegraph.

FOR some time past the bank officials of this city have been engaged in looking after some system of protection or alarm, to work in connection with each of their institutions to the headquarters of the fire alarm telegraph, where some person is always on duty. Mentioning their desires to Superintendent A. L. Whipple, of the fire alarm telegraph, that gentleman's efficient aid was enlisted, and to-day the public will have an opportunity of witnessing the operations of the new and beautiful machine which will in future perform an important part in guarding the millions of treasure locked in the bank vaults of this city.

The electro-magnetic watch clock is a beautiful piece of mechanism, enclosed in a black walnut case, about six feet high and two feet wide. It consists of a magnet, with a recording dial, clock works and a signal bell. From this clock run eleven wires, one to each of the banks, Commerce Insurance Company, and the Gas Com-

pany's offices. Two watchmen will be employed, whose duty it will be to visit each bank at stated times during the night and give signals, which are recorded on the dial of the clock in the fire alarm office, showing the time that the signal was given from any particular bank or office.

The order in which the banks must be visited will be changed each night, as also the time that the signals shall be made from each; the watchman must make the visits according to the programme handed him every night by Superintendent Whipple. In this way no collusion can be formed between the watchmen and evil disposed persons, who may want to operate on any safe or vault.

If this signal is not given within five minutes after the appointed time the man on duty at the fire alarm office communicates with the office of the Superintendent of Police, and an officer is immediately despatched to the point where the trouble exists, and from whence no signal has been sent.

In this way freedom from burglary is insured, and bank officials may rest peacefully at night, without any fears of the depredations of the bold rascals who have heretofore made raids on these moneyed institutions. The work has been well done, so far as we have examined, and we are proud that Mr. Whipple has shown such a thorough knowledge of his profession as an electrician as is evinced in the work just completed, and which will be open for the examination of all at half past eleven o'clock this morning, in the fire alarm office, in the new city building on Pearl street.—*Albany Argus*.

New Patents.

For the week ending June 7, and bearing that date.

REISSUED.

No. 4,012.—Division A.—FIRE ALARM SIGNAL AND APPARATUS. Alexander Allen, Rochester, N. Y. Patent No. 90,806, dated June 1, 1869.

Claim.—1. The interposition of an alarm signal between any two successive box signals in sounding a fire alarm on a fire alarm telegraph, for the purpose of preventing mistakes in getting the number of the station or box giving the alarm, substantially as is herein specified.

2. The system of signals for fire alarm telegraphs herein shown, composed of a series of rapid alarm signals, and a series of box signals, when the same are so used as that an alarm signal is interposed between any two successive box signals, substantially as is herein specified.

3. The arrangement of a series of pins or notches upon a circuit wheel, used in combination with a pivoted lever for the purpose of breaking the circuit in a magnetic fire alarm telegraph, in such a manner that the revolutions of said circuit wheel shall cause two or more box signals and one or more alarm signals, an alarm signal being interposed between any two successive box signals, substantially as is herein specified.

4. An automatic fire alarm apparatus for fire alarm telegraphs, when so constructed and arranged as that, when acting to give an alarm of fire, it shall first give an alarm signal, then a box signal, then repeat alarm signal, then repeat box signal, and so on, substantially as is herein specified.

No. 4,013.—Division B.—FIRE ALARM SIGNAL AND APPARATUS. Alexander Allen, Rochester, N. Y. Patent No. 90,806, dated June 1, 1869.

Claim.—1. The combination of the circuit wheel H, shaft c, pinion G, vibrating gear sector D, driving shaft b, mechanical motor E, and winding lever B, said gear sector meshing directly into the pinion G, substantially as and for the purpose specified.

2. Limiting the rotation of the main driving shaft of an automatic fire alarm apparatus, in either or both directions, by means of fixed stops acting in combination with the gear sector on said shaft, for the purpose of limiting the length of the fire alarm given by said apparatus, substantially as is herein set forth.

3. The combination of the spring E or its equivalent, shaft b, gear sector D, shaft c with pinion G, ratchet wheel I, and circuit wheel H secured thereon, gear wheel J, with pawl T and spring U secured thereon, gear train K L M N O, and shaft f with regulator W thereon, the several parts being arranged and operating as and for the purpose specified.

4. The lever or key Q, having the sliding rod n arranged thereon, when used in combination with the circuit wheel H, provided with the pins or notches h k l, the several parts being arranged substantially as is herein specified.

5. The combination of the standard P, having one end of the main circuit attached thereto, lever or key Q, having the other end of the main circuit attached thereto, and with the sliding rod n arranged therein, circuit wheel H, provided with pins or notches h k l, shaft c, pinion G, geared sector D, shaft b, and spring E or its equivalent, the several parts being arranged and operating as and for the purpose specified.

For the week ending June 14, 1870, and each bearing that date.

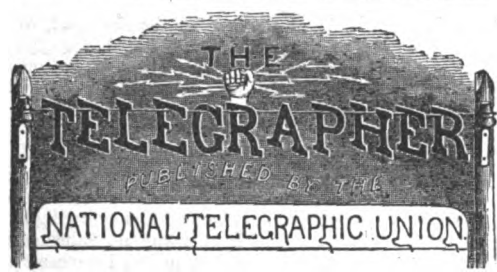
No. 104,217.—ELECTRIC FUSE HEAD. Henry Julius Smith, Boston, Mass.

Claim.—1. A fuse head having plates or wires extending from the magazine or chamber to the outside, of such length and in such manner that communication between them, and communication between the exposed ends of the battery wires to which they are attached, is prevented by the interposition of the body of the fuse head, or by the interposition of a wedge, substantially as described.

2. A fuse head having plates or wires provided with eyes, substantially as described, for the purpose specified.

MARRIED.

HAMBLET—LARRABEE.—At Auburn, Maine, June 22d, Mr. J. HAMBLET, JR., of Boston, to Miss M. LOUISE L. LARRABEE, of Auburn.



SATURDAY, JULY 2, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE NATIONAL TELEGRAPHIC UNION.

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THE MORSE TESTIMONIAL.

WE publish this week a communication from Pittsburg, Pa., relative to the proposed testimonial to Prof. MORSE and the character of its originators. Personally we know nothing of Mr. HOOVER. If injustice has been done him by our correspondent our columns are open to him to defend himself. We think, however, that our correspondent is mistaken with regard to the part taken by the Western Union Company, as a company, or by its managers, in regard to the testimonial. We have been informed and believe that the testimonial was originally suggested by Mr. HOOVER to Mr. J. D. REID, and that after taking some time to consider the matter the latter determined to attempt to realize the idea. In this he acted in his individual and personal capacity, and the Managers of the Western Union Company, as such, have not attempted to interfere with it other than by endorsing the scheme, and aiding it with their personal influence and pecuniary contributions.

It was unquestionably a mistake on the part of its originators to endeavor to make it merely a Western Union affair, though we must confess to an inability to comprehend why they were not at liberty to do so if they chose. So long as those not in the employ of that company were not asked to contribute it was certainly a matter which did not specially concern them. In response to suggestions of Western Union employés and others interested in telegraphic business, the telegraphic fraternity generally were invited to join in the testimonial if they desired so to do. The names of gentlemen who certainly cannot be regarded as particularly interested in the Western Union Company were added to the Executive Committee, with a frank explanation from Mr. REID of the reasons why he did not, on his own motion, feel at liberty to invite the coöperation of others than his associates in the service of that company. In all this we do not exactly see the ground for the position taken by some of our correspondents in reference to the matter. No person is under the slightest obligation to contribute who is not entirely willing to do so, whether a Western Union employé or otherwise. It is in all respects intended to be a free will offering. Any other would be an insult rather than a compliment to Prof. MORSE.

These are our views. We shall cheerfully publish, as our space will permit, the views of those who may differ from us, but we think that it is due to Mr. REID that his side of the case should be presented to our readers. We are seldom fortunate enough to agree with him editorially, and have perhaps sometimes criticised him and his paper harshly, but we intend always to render to him, as well as to everybody else, justice and fair treatment. While he edits the official organ of the Western Union Company he must of course sustain the

policy and acts of that company with such ability and sincerity as he can. Personally we have no quarrel with or hard feeling towards him, and have no hesitation in endorsing him, as the Treasurer of the Testimonial Fund, as the right man in the right place.

The Darien Expedition.

THE expedition to determine a suitable point for the construction of a ship canal across the isthmus of Darien has concluded its labors and will soon return home. It has been unsuccessful—no practical route for a ship canal having been found. The telegraph corps attached to the expedition has proved of great service. Mr. CLARKE and his associates will be heartily welcomed home once more by their professional brethren.

Satisfactorily Explained.

MR. E. F. SMITH, formerly of the Western Union office, Omaha, Neb., and now of the Atlantic and Pacific office, Chicago, has communicated with us as requested, some weeks since, and has satisfactorily explained the matters upon which we wished to hear from him.

Mr. SMITH has been a fast friend to THE TELEGRAPHIC, and will do what he can to sustain it and increase its circulation in his present locality. We ask other friends of the paper to coöperate with him in this good work.

A New Firm.

THE card of Messrs. SHAWK & FOOTE, electrical instrument manufacturers and dealers in telegraph supplies, at 55 Centre street, Cleveland, Ohio, will be found in our columns. They are the successors of GEO. W. SHAWK & Co., and are prepared to fill satisfactorily all orders in their line with which they may be favored. They are experienced and skilful in their speciality, and we bespeak for them a fair share of patronage.

Washington, D. C., and the East Indies Telegraphically connected.

ON Thursday of last week Washington, D. C., and the East Indies were telegraphically connected, via the Atlantic Submarine Line to London, the Falmouth, Gibraltar and Malta, the Mediterranean and the Suez Cables to Bombay, the latter constituting a direct submarine route to India. On that day a banquet was given at the house of Mr. JOHN PENDER, London, to celebrate the event.

In the evening of that day the following congratulatory messages were exchanged:

BOMBAY, INDIA, June 23, 1870.

THE PRESIDENT OF THE UNITED STATES, Washington:

The Viceroy of India for the first time speaks direct by telegraph with the President of the United States. May the completion of this long line of uninterrupted communication be the emblem of lasting union between the Eastern and the Western world.

THE VICEROY OF INDIA.

To this despatch the following answer was returned by order of President Grant:

WASHINGTON, D. C., June 23, 1870.

THE VICEROY OF INDIA:

Your despatch of this date is received. I congratulate you upon the connection of your country with the balance of the world by telegraph, and join you in the wish for a lasting union between the Eastern and Western hemispheres.

U. S. GRANT.

The following despatch was sent from here by Mr. Field:

JOHN PENDER, Esq., 18 Arlington street, London:

Most heartily do I congratulate you and your associates on the completion of the submarine telegraph lines between England and India, and I trust that within one year the cables from India to Australia and to China will have been successfully submerged, and that in 1872 a cable will be laid from California to the Sandwich Islands, Japan and China, thus completing telegraphic communication around the world.

CYRUS W. FIELD.

Washington, Thursday, June 23, 1870.

SIR JAMES ANDERSON TO CYRUS W. FIELD.

LONDON, June 23, 1870.

CYRUS W. FIELD, Esq.—The company is now assembling.

bling. Your message is six hours old. We mean to hurrah when you get your cable across the Pacific, and mean to have you give us a cheer. The Prince of Wales will be present to-night. The press of India will telegraph to the press of New York as soon as they are up.

ANDERSON.

FIELD TO ANDERSON.

WASHINGTON, June 23, 1870.

SIR JAMES ANDERSON—Your message of this evening was received by me before five o'clock this afternoon. I am to dine with some friends this evening, when we will drink your health, and wish prosperity to all those who have contributed to add another link in that telegraphic cable which will soon be completed around the globe; and I hope it will prove a blessing to all the nations of the earth, which it will bring into communication with each other.

CYRUS W. FIELD.

THE PRINCE OF WALES TO PRESIDENT GRANT.

LONDON June 23, 1870.

THE PRESIDENT OF THE UNITED STATES, Washington: I feel sure you will rejoice with me on the completion this evening of submarine telegraphic communication between America, Great Britain and India.

THE PRINCE OF WALES.

THE PRESIDENT TO THE PRINCE OF WALES.

WASHINGTON, June 23, 1870.

HIS ROYAL HIGHNESS THE PRINCE OF WALES: Your despatch of this evening is received. America and Great Britain have reason to feel gratified at the successful connection of the Far East with them by submarine cable.

U. S. GRANT.

The July Magazines.

PHRENOLOGICAL JOURNAL AND PACKARD'S MONTHLY.

THE July number of this magazine begins its fifty-first volume. The combination of these two popular monthlies, retaining the distinctive features of each, has greatly increased their value and interest, and the magazine should be, as we understand it is, liberally patronized. Mr. PACKARD continues in this form to present his usual variety of interesting, instructive and valuable articles. He delights in his labor, and it is but natural, therefore, that he should be successful.

The price of the double publication is only \$3 per year, and from July to January it will be furnished for \$1 50.

THE LITTLE CORPORAL.

The July number of this magazine also commences a new volume—the eleventh. It has been greatly enlarged and improved, and is well illustrated by engravings, highly creditable alike to the artists and the publishers. Its table of contents is well calculated to please, interest, and instruct not only the boys and girls but those of more mature age. Its contents are entirely original. In its new and improved form it is one of the handsomest and best of the magazines. It is furnished to subscribers at \$1 per year by SEWELL & MILLER, of Chicago, Ill.

Dot Your I's.—A Good Suggestion.

TO THE PUBLIC.

As a telegraph operator and type setter, I would say to the public that if in making the letter I (capital) writers would put under it the telegraph character representing that letter, which is two dots, thus (..)—operators and many type setters would be enabled to distinguish I from J, and avoid many annoying errors; and if the public generally, especially school teachers, would adopt this suggestion, the misfortune suffered by all who write the English language would be removed.

W. D. GENTRY.—Nashville Union.

Recent British Patent.

(Provisional protection for six months.)

SPECIFICATION.

No. 3,324.—O. FAURE, Strand, London, W. C. Galvanic Batteries. Dated November 18, 1869.

This consists in making the porous cells or jars of batteries known as "two liquid batteries," and also electro-positive poles plates, bars or rods of a mixture of clay, plaster or other like material capable of binding, and of powdered plumbago, coke, carbon or other like material, capable of conducting electricity. Also, in making said porous cells or jars, as above described, and porous cells and jars generally, when intended for use in nitric acid batteries, so formed that they (the cells and jars) may be kept stoppered, or otherwise closed whilst the batteries are in action, and thus prevent the escape of gases and fumes into the atmosphere. Patent completed.

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SHAWK & FOOTE,
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 AND DEALERS IN
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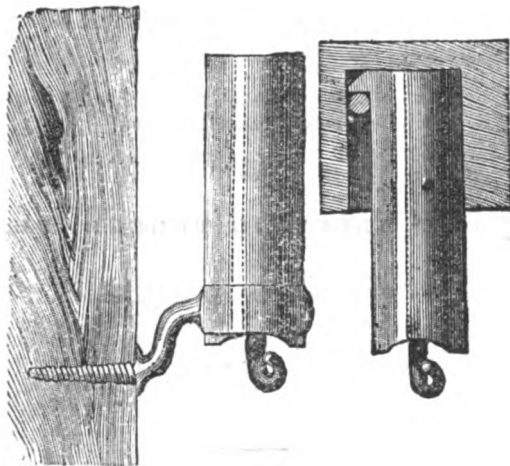
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 Its insulating properties exceed those of the glass a hundred thousand fold.

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 They are warranted not to break or part.
 They are made with a screw shank, to fasten into the pole, price 38 cents each, or without the screw, for cross-arms, 30 cents each.

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 A stock of the Insulators always on hand at our stores.
 THE BROOKS' INSULATOR, with the PATENT COMPOUND WIRE and our PATENT MAGNETS, constitute the best Telegraph Lines ever constructed.

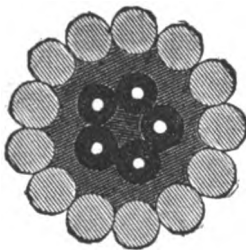
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BLASTING AND MINING PURPOSES,

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As an Insulation for Telegraph Cables and Electric Conductors GUTTA-PERCHA has been universally adopted by all scientific and practical Electricians and Manufacturers of Telegraph Cables and Wires in this country and Europe, and has sustained, with increasing confidence in its superiority, the practical test of over twenty years' general use.

The PROPRIETOR would say, to all parties desiring

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that he will guarantee to make and deliver at his Factory any style of Cable, Insulated with Gutta-Percha, as low as they can import Cable of the same style and quality.

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247 SO. WATER ST. CHICAGO, ILL.,

have been appointed by me GENERAL AGENTS for the sale of any Telegraph Cable or Wire manufactured at the Works in New York, at Factory Prices, delivered in New York.

JOHN THORNLEY, 503 Chestnut St., Philadelphia,

has been appointed Agent for the sale of any and all goods manufactured by me, at Factory Prices, delivered in New York.

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for sale of all goods (except Telegraph Articles), are

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SUBMARINE CABLE.

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OR

COMPOUND RUBBER COVERED WIRE

SUBTERRANEAN & AERIAL WIRES,

OF THE

HIGHEST INSULATION.

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offer for sale, as TELEGRAPH and ELECTRIC CONDUCTORS, Wires protected by the BEST INSULATOR and STRONGEST RESISTANT TO CHEMICAL ACTION and ATMOSPHERIC INFLUENCE.

After the experience of several years in the use of KERITE for purposes of insulation, we have concluded to adopt it as the very best substance for wire covering, not only for use of offices but for SUBTERRANEAN, SUBMARINE and AERIAL LINES. We have used it unprotected for years under ground, and exposed to the most injurious atmospheric influences—to heat, cold and moisture—and have yet to learn its failure, when other ordinary insulating substances would have been rapidly destroyed. UNDER WATER it has retained an electrical charge for many hours, thus ranking it in the HIGHEST GRADE of NON-CONDUCTORS.

We have, therefore, made arrangements not only to secure THE EXCLUSIVE AGENCY for its sale, for the purposes for which we have already sold it so largely, but to furnish complete

IRON-CLAD CABLES,

of the usual size, with KERITE COVER, believing that it will exceed, in insulation for submarine purposes, ANYTHING HITHERTO MANUFACTURED.

We shall be happy to furnish estimates for any amount and size of cable, which will be found to compete with any other construction, both in quality and price.

In corroboration of our statements we append extracts from reports of those who have exposed it to the severest practical tests.

From Prof. SILLIMAN, of Yale College, Nov. 10, 1868.

"I am satisfied, as the result of my own researches, that ozone is by far the most fatal of atmospheric influences. I have submitted portions of KERITE to the action of a highly ozonized air for a sufficient length of time to prove them, and at the same time have exposed the best English Gutta-Percha Covered Cable to the same tests, with the following result: After long experience KERITE resists perfectly! The best English Gutta-Percha Cable was speedily destroyed. A few days' exposure to ozone would produce more effect than many years in a normal atmosphere, exposed to carbonic disulphide, nitric acid, sulphuric acid, sulphur dioxide, nitric peroxide, chlorine gas and alkaline hydrates. Gutta-Percha is immediately dissolved in carbonic disulphide, and powerfully acted upon by alkaline hydrates. Some samples of KERITE resist the action of the former in a surprising manner, and are completely unaffected by the latter."

"New York, May 14, 1870.

"In nearly two years since the foregoing was written I have made a considerable number of experiments upon the KERITE Compound of A. G. DAY, all of which tend to confirm former results; while the practical test of the continued use of electrical conductors covered with it, and the growing favor with which they are received by electricians, offers the best guarantee of its permanent value.

"B. SILLIMAN."

From MOSES G. FARMER, of Boston, Mass.

"I have tested 195 feet of this wire, and found it a better insulator than Gutta-Percha.

"The instrument used would have shown a current through 300,000 miles of Telegraph wire. The 195 feet showed no leakage in water. The KERITE insulated wire withstands atmospheric agencies wonderfully, and will last for years when exposed to the atmosphere; likewise, when buried in the earth, there is no reason to apprehend decay. It is a well known fact that Gutta-Percha deteriorates very rapidly when exposed to atmospheric influences, and therefore cannot be advantageously used for the covering of wire for out-door exposure unless buried in permanent moisture."

From Mr. E. A. CALAHAN, Supt. Gold and Stock Telegraph Co., May 14, 1870.

"Under all circumstances it has given me the fullest satisfaction. The peculiar nature of our business renders it necessary for us to use the most perfectly insulated wire. I have tried several kinds of insulated wire, but have been compelled to take down and substitute KERITE instead. Wire strung a year since is as good as the first day put up. Have tested it after three days' constant rain and could not find one degree of escape. We use it in gas pipes, and sometimes placed near furnaces subject to very high temperature. I have not been able to detect the slightest change from its original condition.

"We have exposed it to the extreme cold and heat of the past two years and a half, strung over the roofs of buildings, which we consider the best test of its indestructible and insulating qualities."

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Among other Telegraphic Supplies constantly kept on hand,
they are prepared to furnish promptly the following novel
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KERITE (OR HORN COVERED) COPPER OR COMPOUND
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BLASTING APPARATUS, CARTRIDGES, BATTERIES, &c., &c.
CALCIUM LIGHTING APPARATUS,
MEDICAL BATTERIES,
INDUCED AND DIRECT CURRENTS;
ELECTRO-PLATERS' BATTERIES AND MATERIALS,
ELECTRO GONGS, OF ANY DESIRED SIZE OR WEIGHT,
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They guarantee to give satisfaction to all who favor them with
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articles supplied.

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COPPER FOR CONDUCTIVITY.

STEEL FOR STRENGTH.

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compared with iron, consists in its LIGHTNESS, reducing by over
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Relative TENSILE STRENGTH, homogeneity and elasticity—de-
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CONDUCTIVITY—insuring great improvement in the working of
lines in any condition of the weather;

And in its DURABILITY, which greatly exceeds that of the best
galvanized iron wire;

Altogether resulting in a very great reduction in the cost of
maintaining and working telegraph lines, while, at the same
time, insuring

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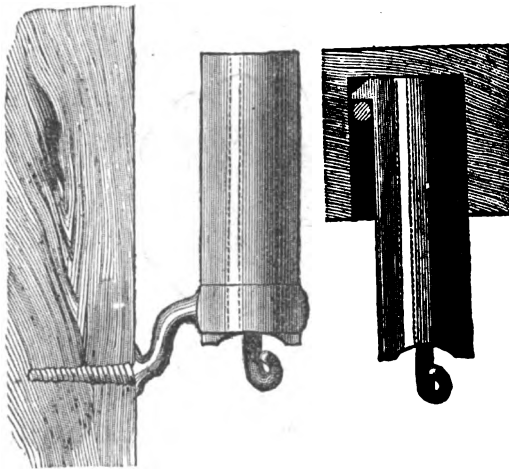
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Its great strength and durability make it the most economical
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Every report received from them is of the most favorable
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Gutta-Percha covered Telegraph Office Wire, in great variety of size and style.

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POLE LINE CORDAGE, with Fibre, and Bishop's Patent Compound outside.

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BRIDGE'S PATENT Double Covered Cordage.

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OF

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It has been the custom of the present publisher and editor of

"THE TELEGRAPHER"

to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to

INCREASE ITS CIRCULATION.

This year we would say to our friends, as a stimulus to their zeal on behalf of the

ONLY ORGAN OF THE TELEGRAPHIC PROFESSION IN AMERICA, that the unscrupulous agents of the great TELEGRAPH MONOPOLY OF THE WORLD, the Western Union Telegraph Company, annoyed and angered at the boldness and faithfulness with which this paper has MAINTAINED THE RIGHTS, and exposed and denounced the OUTRAGES AND INJUSTICE practised by them upon its employes, have announced that

The Days of the Paper are Numbered!

Orders have been issued to Superintendents and Managers, that subordinates be required to discontinue the paper, on pain of dismissal.

The President of that Company, however, distinctly disavows this action, and says, in a communication to the editor of THE TELEGRAPHER: "I do not propose to make its (THE TELEGRAPHER'S) 'discontinuance and discountenance' a test of competency for our service."

It remains to be seen whether the Practical Telegraphers of this country CAN BE RELIED UPON to stand by those who seek to secure to them JUSTICE AND FAIR TREATMENT.

In addition to the inducement offered above to exertions in support of the paper, we offer the following

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This offer will be good until July 31st, 1870.

For TWENTY-FIVE SUBSCRIBERS we will give to the person sending the names and money a

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For TWENTY SUBSCRIBERS a No. 1 TELEGRAPH KEY, either Caton or Self-Closing, as may be preferred, and a copy, either of "Modern Practice of the Electric Telegraph" or "Sabine's Electric Telegraph."

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For SIX SUBSCRIBERS, "Noad's Inductarium" and "Sabine's Electric Telegraph."

For THREE SUBSCRIBERS, F. L. POPE'S "Modern Practice of the Electric Telegraph."

In addition to the above, we will give to the person who shall, on or before the 31st of May, send us THE LARGEST LIST OF SUBSCRIBERS, not less than FIFTY,

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For the second largest list, not less than THIRTY-FIVE,

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Subscriptions must be for one year, or equivalent to that, and at the regular subscription price of the paper,

TWO DOLLARS PER YEAR.

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Remittances may be made by Post-office order or registered letter, at the risk of the paper. From remittances of not less than Five Dollars the expense of the money order or of registering the letter may be deducted.

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ALLEGHENY,
MONTREAL,
QUEBEC,PORTLAND;
ST. JOHN, N. B.,
HARTFORD,
TROY,
NEW HAVEN,
ROCHESTER,
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ALBANY,
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CAMBRIDGE,

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FIRE ALARM TELEGRAPH

are a Combination of Circuits, the Automatic Signal Boxes, Electro-Mechanical Bell and Gong Strikers.

THE AMERICAN FIRE ALARM AND POLICE TELEGRAPH is covered by some twenty patents. Very early after its introduction into Boston, GAMEWELL & Co. purchased the original patents of FARMER & CHANNING, and during the past fifteen years have spared no expense or pains to improve and perfect this system.

Any information desired in regard to the above system will be cheerfully and promptly furnished upon application at the office.

A pamphlet, setting forth more fully its advantages and superiority, has been printed, and will be supplied to Municipal Authorities and others interested in Fire Alarm and Police Telegraphy, upon application as above.

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At No. 7 EXCHANGE PLACE,

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Keeps constantly on hand and for sale his

Improved Telegraph Instruments

Having adopted the use of

OREIDE METAL,

which is much RICHER AND FINER than brass, he now presents his work in a style and of a quality that are unsurpassed. His relays were awarded the

FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionally stronger magnet, while the resistance will be the same. He is also manufacturing the

IMPROVED BUTTON REPEATER,

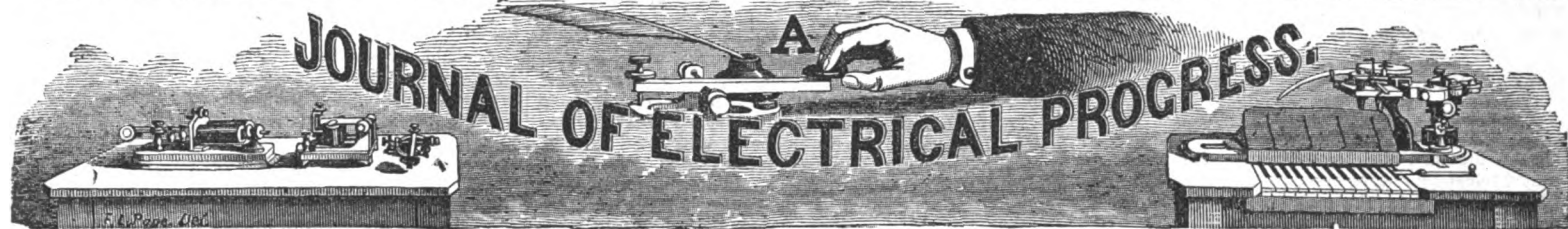
the cheapest, most reliable and simple repeater as yet invented

PRICES.

Button Repeaters.....	\$6 00
Relays, with helices in bone rubber cylinders (very fine).....	19 50
Small Box Relays.....	16 00
Medium Box Relays.....	17 00
Main Sounders, some as the above, with heavy armature levers without local connections, 75 cents less.	
Pocket Relays, with all the adjustments of the above, and good Lever Keys.....	22 00
Excellent Registrars.....	40 00
Pony Sounders.....	6 75
Keys.....	6 50

All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package. He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

THE TELEGRAPHY.



Vol. VI.—No. 46.

New York, Saturday, July 9, 1870.

Whole No. 208.

ON THE WORKING CAPACITY OF TELEGRAPH LINES.

BY DAVID BROOKS.

[Concluded.]

ONE of the most prominent features in the construction of the English telegraph lines, and the first to attract the attention of the American telegrapher upon visiting that country, is the size and weight of the wires used as conductors. The wires used for the longer circuits are Nos. 8 and 4 Birmingham gauge, which are larger than Nos. 2 and 3 American gauge. On each side of the railways are a line of posts, carrying from eight to ten wires, of which generally six out of eight are of the larger sizes, and underneath these are two or more No. 8 wires, for the shorter and less important circuits. Although the latter are equal to the largest size employed in America, they appear very small in comparison with the larger wires above. To each post is attached a lightning conductor or "earth wire." The principal object of this arrangement is to prevent "cross currents" from one wire to another, or what the English telegrapher terms "confusion of signals," by cutting off the currents passing from one wire to another and conducting them into the ground. The insulator employed there is of brown earthenware, with a salt glaze. It is more hygroscopic than glass, and inferior to the latter as an insulating material. The principal involved in this arrangement is that of working an uninsulated wire through water, by simply making the resistance of the former very small in comparison with that of the latter. Their theory is that the insulator is benefited by being washed by the rain. If this theory is correct the advantages realized ought to be very great, for it rains there almost every day. In order to enable the posts to sustain the weight of these heavy wires it is necessary to employ at the angles and curves contrivances known as "struts," "stays," and "double frames." In this manner the English telegraphers endeavor to overcome the effects of leakage at the insulators by making the latter not absolutely small, but relatively small in comparison with the conducting capacity of the wires.

A careful galvanometrical test of the English insulators, in comparison with the paraffin insulator, which was made in London, showed a difference at the end of one month in favor of the American insulator in the proportion of 60,000 to 1! Tests made in this city, at the end of one year, show a much greater disparity, being in fact no less than 200,000 to 1. Now the same causes that impair the value of the English insulators will in time produce the same effect upon these. The resistance of five of these insulators was reduced by artificial means, that is, they were placed directly in the current of smoke from a chimney for a period of six months, until they gave under test, during rain, an average deflection of 50,000 degrees. The English insulators, which had been exposed merely to the ordinary atmosphere influences, when tested at the same time, showed a greater leakage.

During the continuance of the rain the paraffin insulators were cleaned with a brush dipped in liquid paraffin. The first insulator gave under test a deflection of 50,000 degrees. We set the person at work cleaning it, and in five minutes stopped him and tested again. The deflection was reduced to zero. Another insulator, time four minutes, gives the same result, as did also the third with three minutes, and the fourth with two minutes. But one minute was allowed for cleaning the fifth insulator. This brought the leakage down from 50,000 to 1,500 degrees. One minute more of cleaning brought the index of the galvanometer to zero, the same as the others. We can take any of these insulators, which have deteriorated by exposure to the weather, and completely restore their insulating qualities at the same trifling expense.

With a knowledge of these facts, does it not occur to the reader that the means employed by the English tele-

graphers to secure a working margin between their insulators and conductors is needlessly expensive. The postmaster general, when called on by Parliament recently to account for the frequent interruptions and delays to the telegraphic service, gave but one reason, and that was "defective insulation." This is but the inevitable result of attempting to carry out in practice a theory that is radically defective.

The writer was shown, at the Government Telegraph Works in Paris, in 1867, a lot of wire in bundles, piled eight feet high, and covering, as nearly as could be judged, about an acre and a half of ground. It may have been less, but was quite as like to have been more. This was condemned wire, or rather wire which had been taken down from the telegraph lines and replaced by a larger size. The greater part of this condemned wire was of four millimetres diameter, a size not varying greatly from that known in this country as No. 8. It was in excellent condition, being nearly as bright as when new, and of the best charcoal iron. Its quality was superior to that of any wire which has ever been used in this country. This wire had been replaced by a size of five millimetres diameter, equivalent to about No. 3 of the American gauge. The French Government had incurred this great expense in order to improve the working condition of their lines, but the results failed to answer their expectations. The effective margin, it is true, was considerably increased, but the escape from the insulators was still a serious evil. They then turned their attention to the removal of the latter difficulty, and by changing the insulation they increased the working margin immensely. They were by these means enabled to work direct to Bordeaux, Marseilles and Havre, and through circuits nearly a thousand miles in length, in rain, at full speed, with the printing instrument. These circuits had previously been worked by the aid of repeaters, by the Morse system, and at a great disadvantage. A letter from one of the *Inspecteurs* states that they now work two wires from Paris to Berlin with the Hughes printer, at full speed, during rainy weather. In fine weather it has been observed that there is an interference arising from inductive action between these two wires, which are upon the same poles, and that therefore they cannot work both wires at full speed at the same time—a singular effect, arising from the exceptionally high insulation.

The capacity of the Hughes instrument for speed is determined by the number of times any given word of average length—for instance, "Paris"—can be printed on short circuit in one minute.

The insulators which were thrown away when the above mentioned change was effected, were made of the best French china, the most perfect material of the kind which has ever been discovered. These insulators were beautifully glazed, and were in possession of all the advantages which could be derived from being "washed in the rain."

The French and Prussian telegraphic engineers have learned from experience that an insulator, to be effective in rain, must have a well protected drip or shed, and this portion of the insulator must be kept clean. The credit of designing the first insulator upon correct scientific principles is due to Genl. Chauvin, Director of Prussian Telegraphs. It has great length and small diameter. The paraffin insulator has still greater length, and its resistance is proportionately higher. The latter is also much more easily cleaned and kept in order. If there is any design at all in the arrangement of the English insulator, it apparently consists in rendering it practically impossible to clean it. They are fastened to the cross-arm with bolts and screw-nuts, which become rusted by exposure, so that it is almost impossible to loosen them. Without removing the insulator from the arm it is impossible to get at the inner surface in order to clean it, and when cleaned its surface will retain more moisture

than glass. If the English postmaster general has come to the definite conclusion that their system is "defective," there is some probability of an improvement before long. The English notions of insulation are perhaps not more peculiar than some other features of their telegraphic system, which they have clung to for years with a pertinacity no less obstinate than amusing. The era of "needle instruments" and "sand batteries," in that country, is even now but just passing away.

The intelligent reader will at once understand, from what has been said, that all efforts to improve the present defective condition of our telegraph lines, and to increase the effective working margin, must be made either in the direction of improving the insulation of the conductor or of reducing its resistance. The problem, therefore, resolves itself into the inquiry: Which is the most economical and convenient means of attaining the desired result? A brief consideration of the trouble and expense necessarily involved in replacing the present conductors with others of larger capacity, compared with that of substituting the most perfect insulators known for the inefficient ones in general use, is sufficient to answer this question. The improvement that may be effected in the condition of a line, by thus perfecting its insulation, is simply equivalent to the difference between the working of any circuit in fine and in damp and rainy weather.

It has been ascertained, beyond a doubt, that the escape from a telegraph line is due solely to conduction of the insulators, and of foreign bodies in contact with the wire. It is found that the opinion which prevailed for many years, that a considerable portion of this leakage was due to the conduction of damp air, is not supported by fact. The amount of current lost in this way is far too small to be detected by the most sensitive apparatus employed in modern electrical researches.

The Originator of the Telegraph System.

THE name of Mr. Francis Ronalds was lately recorded as having received the honor of knighthood. Who is Mr. Francis Ronalds? was a question more likely to be asked than answered. Mr. Ronalds is neither more nor less than the originator of our telegraph system. He was the very first, either here or abroad, to invent an electric telegraph so constructed as to be capable of extensive practical application, and so far back as 1823 he fully developed its principle and mode of action. Still earlier, viz., in 1816, he had constructed a working electric telegraph, and on offering it to the then Government, received an answer which can never be too often cited as an illustration of official complacency: "Telegraphs of any kind are now wholly unnecessary, and no other than the one now in use will be adopted." Nothing daunted by this apathy Mr. Ronalds matured his invention, and in 1823 published a "Description of an Electric Telegraph, and of some other Electrical Apparatus." Mr. Ronalds was too far ahead of his time, and too purely a man of science, to secure a hearing for his discovery in those early days, and it was left to others to mature his idea, and to establish the system which his prophetic eye had foreseen would one day transform the world. It was not till 1837, fourteen years after Mr. Ronalds' pamphlet, that Messrs. Cooke & Wheatstone took out their first patent. The science and practical skill of these and other eminent electricians have brought electric communication to its present state; but the great fact remains that Mr. Ronalds was the first to demonstrate practically the principle which they have developed. At last, thanks to Mr. Gladstone's sympathy with genius, the special merits of Mr. Ronalds as a pioneer in this great field of action have received a public recognition. Mr. Ronalds, although still an active devotee of science, is now in very advanced age. A little longer and his honors might have come too late.—*Fall Mail Gazette*.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our Correspondents. Our columns are open to free discussions on all Telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Up the River—A Town Disappeared.

ST. PAUL, June 18.

TO THE EDITOR OF THE TELEGRAPHER.

ON the first inst. the Lake Superior and Mississippi Railroad telegraph line, reaching from St. Paul to Duluth, at the head of Lake Superior, was purchased by the North Western Telegraph Company, and became an important part of that institution. Previous to the first inst. this branch had a connection here with the P. and A. Company, being the only feeder that company possessed in this part of the country. On the transfer being completed the tariffs were reduced about 30 per cent. The following extract from the St. Paul Press of June 17th gives a correct report of our contemplated summer's work:

"The North Western Telegraph Company are preparing to proceed immediately to extend their lines along the main line of the St. Paul and Pacific Railroad to Fort Abercrombie, and thence down the Red River of the North to Pembina, and also a line from St. Cloud, via Crow Wing, to the junction of the St. Paul and Pacific with the Northern Pacific Railroad. Mr. Simmons, President of the Telegraph Company, has recently concluded a contract on behalf of his company for the construction and operation of the telegraph line of the N. P. Railroad from Lake Superior to the Pacific Ocean, and he looks upon this as only a link in the chain of wires with which he is rapidly covering this northern country."

The transitory nature of our people seems to have spread itself to the towns hereabouts, if our friend Dow, of Minneapolis, tells his story correctly. He had been for some months chief operator at the town of Black Hoof, on the grade of the Superior Railroad, 100 miles north of St. Paul, which town consisted of one log stage house, surrounded by a pine forest. A few weeks ago the landlord (owner of the town) concluded to move to Duluth. The house came down, the inhabitants (two and a dog) moved off, leaving Mr. Operator alone, without even "a lodge in some vast wilderness." Not being a bear, or adapted to living in a tree, and being afraid it might rain before a new town sprung up about him, our manipulator pocketed his relay and started for St. Paul sorrowfully.

Grading on the N. P. Railroad was begun to-day at the Dalles of the St. Louis river, 23 miles south of Duluth. Z.

Congress and the Telegraph.

WASHINGTON, D. C., July 6.

TO THE EDITOR OF THE TELEGRAPHER.

THE difficulty between the Atlantic and the Cuba Cable Companies continues, and is being ventilated through the local newspapers, and by propositions in Congress calculated to injure or destroy the franchises, or prevent the carrying out of the projects of either party. In this quarrel your correspondent is not disposed to take sides, and would only repeat the suggestion that it would be the part of wisdom for the parties to compromise their difficulties and unite their forces.

On Saturday last, in the Senate, Mr. Ramsay, from the Committee on Post-offices, reported, with amendments, the bill to establish a transatlantic postal telegraph service by an American cable. It directs the Postmaster General to provide for the reception at every post-office of messages to be transmitted to Europe by submarine cable, at rates, for transmission to any telegraph station in Belgium, Great Britain and France, not exceeding five dollars in gold, for a single message of ten words, including date, address and signature, and thirty cents in coin for each word additional; the press, however, to be charged only one half of these rates. In order to enable the Postmaster General to establish said service, the bill authorizes Robert Squires, Lyman Tremain, Hiram Barney, Erastus Corning, Jr., George Harrington, or any company organized by them under the laws of any State, to lay and maintain one or more telegraphic cables between the States of Maine and Georgia to Belgium, subject to numerous rules and regulations, which are specified. The Post-office department is to receive twenty-three cents for each message sent through its agency over the cables, and the residue of all receipts for such messages is to be paid to the company.

On Tuesday last Mr. Washburne, from the Select Committee on the Telegraph, made his long expected report in favor of a Government telegraph system. This report is lengthy, and presents all the arguments that can pos-

sibly be adduced in favor of saddling the Government with the expense of the telegraph in this country. I have not time this week to present an abstract even of this report, but there is one point to which I wish to refer. Mr. Washburne states the value of all the existing telegraph property in the United States as nine millions of dollars, and says that for an additional expenditure of \$9,000,000 they can be put in order, and increased so as to do three times the present amount of business. The absurdity of these figures is apparent to every intelligent telegrapher, but they may serve to impose upon those who are ignorant of the real value of telegraph property, and the actual expense of constructing and working telegraph lines. Instead of \$18,000,000 being required double that amount would be necessary to purchase existing telegraph property, and to increase the facilities as indicated by Mr. Washburne. In presenting his report Mr. Washburne made a few remarks, and said that he hoped to obtain action on the question early in December, and that members would, during the recess, study the report, and be prepared to act when they re-assembled for the short session. He proceeded to demonstrate the great importance of the telegraph, present and prospective, and to argue briefly that, notwithstanding the statistics showed otherwise, Government telegraphs, where established, were a great financial success. He argued that the Hubbard scheme was inadequate to meet the difficulty, and if adopted would probably prove a failure. In this he was evidently correct, as no such scheme can succeed which has not the national treasury to make up the millions of deficit which must annually accrue in carrying out the project.

Mr. Palmer presented a minority report, accompanied by a bill to establish a postal telegraph system, and to incorporate a postal telegraph company.

A resolution to print 10,000 extra copies of the reports and accompanying documents was referred to the Committee on Printing.

CAPITOL.

The Critics Criticised.—Telegraphy and Christianity not Incompatible.

CHICAGO, ILL., June 22.

TO THE EDITOR OF THE TELEGRAPHER.

YOUR issues of May 28th and June 18th contain letters in answer to mine—the first highly complimentary, the second quite the opposite.

In answer to the first, permit me to say that criticism, when it descends to malignity and to speaking evil of the character and motives of our fellow men, especially of those whose past services and present positions demand our respect, is unworthy the name.

If official acts are characterized by "meanness, oppression and malignity," more is accomplished, I think, towards their correction by kindness and respectful petition than by public abuse and slander. I do not profess, as a Christian, to be free from faults, nor do I believe that those whom I have so feebly attempted to defend have shown themselves particularly unfriendly to me.

Allusion has been made to my removal from the management of the Union Stock Yard W. U. office, as though injustice had been done me; and yet in this case, while in good faith, though, perhaps, injudiciously attempting to enforce a rule of the company, I do not know but it was more humane to cut off my official head than to leave me in danger of having my literal head "knocked off" by some of those noble but passionate drovers and stock dealers.

There is one more point I wish to reply to in the second letter.

"Another Operator" says that I promised to go with the "Boys," in case of a strike. He either misunderstood me or wilfully misrepresents what I did say. I did not promise to "go with the Boys," but refused to join in the strike.

If other things in these letters are stated with the same incorrectness, it would be well to print the full names of your anonymous correspondents, in order that the public might the better judge of their merits and truthfulness.

I commend unto your readers, and especially to "Christian," the excellent letter of "An Unbiased Operator," dated "Monroe, Mich., June 4th," and published in your last issue, in answer to the query whether it was possible for an operator employed by the Western Union Telegraph Company to be truly religious?

I believe, of all modern inventions, the Telegraph is calculated to be the most Christianizing in its influences, and its managers and operators should be the foremost in spreading the "Good News" of Salvation through faith in Jesus Christ, as the crucified but risen Son of God. The greatest objection to this question would seem to be that we have to transmit all kinds of despatches not openly profane or obscene; but when we remember that God "sendeth rain on the just and unjust;" that our Saviour was a carpenter, and probably

assisted Joseph in building houses for the good and bad to live in; that the Apostle Paul was a tent maker, and undoubtedly made tents for friend and foe, how can we doubt the wisdom of Paul's command, found in the seventh chapter of First Corinthians, twentieth verse: "Let every man abide in the same calling wherein he was called."

I would say to "Christian" that I am not compelled to work on the Sabbath, and I believe that in every case of really conscientious objection to working on the Sabbath, the President and General Superintendent of this Company would do all in their power to regard the wishes of Christians in this respect.

I hope that the discussion of this and kindred subjects may lead many of my brother operators and others to amendments in life and trust in the Saviour.

J. NEWTON CRITTENTON.

Write for The Telegrapher.—Interesting Southern Items.

MEMPHIS, TENN., June 18.

TO THE EDITOR OF THE TELEGRAPHER.

WHY is it that the Southern Division is so seldom represented in the columns of THE TELEGRAPHER? In your paper of May 28th I notice "Owl" has given an account of a pleasant telegraphic affair that occurred here, and "Pickwick," of New Orleans, at one time promised well, but suddenly ceased to write. As far as my experience goes his views were entirely correct. The general management of Western Union affairs in the Southern Division leaves but little to be asked for, but this is no sufficient reason why we should not keep your readers posted as to matters of interest with us. No doubt they feel as much interest in our welfare and in hearing from us as we do in hearing from them. I have accordingly prepared the following items of interest telegraphically, which, I have no doubt, will be welcomed to the columns of our organ, THE TELEGRAPHER:

The repeating office for Northern Louisiana and Texas has been removed from Vicksburg, Miss., to Monroe, La. in the tenth district. This change throws out of employment C. H. Mixar, Alf. Saville and Mat. Flippen. Mixar has gone north, Flippen and Saville await the course of events at their respective southern homes.

I learn of several changes at New Orleans, and hope Pickwick, or some other equally philanthropic individual in the Crescent City, will kindly post us.

W. H. Nichols, a New Orleans "striker," late of the P. & A. office in this city, takes service with the Western Union (this office) again, for the first time since the 5th of last January. He says he feels "natural" again. Swindell, a Louisville striker, fills the vacancy in the P. & A. office.

The Western Union Company have successfully laid a second cable across the Mississippi at this point for their Arkansas line.

Those "artists" who have not labored in this vineyard have no idea what a large amount of telegraphing is done in this little city. For instance, there are four daily papers, three of which take the American Press Association despatches and one the Associated Press reports. The Western Union main office employs twelve operators, besides which they have three branch offices that PAY. The Southern Pacific and Atlantic have three operators besides the manager. This in a city of only 75,000 inhabitants is, I think, to say the least, but to middling.

The officers of the S. P. & A. have been on a trip to New Orleans and southward, for the purpose of soliciting subscriptions for the extension of their lines to that point. It is rumored that the object of their visit has been in a measure successful, and that work has already begun on the extension.

By the way, let me ask our agent what has become of the subscription list I saw so fully subscribed to. I see no papers coming in. I mistrust the explanation is that it is easy to get paper subscribers, but it's hard to get the two dollars afterwards—that has been my experience. It's a shame and disgrace, for no live operator should be without THE TELEGRAPHER. Exit.

ANSWERS TO CORRESPONDENTS.

AMATEUR CONTRACTOR.—Peel your poles before you set them. The party who told you to set them with the bark on, so that the latter would rot through first before the pole was attacked by decay, affords a fair sample of the scientific ability of the perpetrant of the period. Consult some sensible old farmer in regard to his experience with fence posts.

ELECTRICIAN.—The resistance of the No. 9 galvanized wire used in this country is from 18 to 20 ohms per mile. No. 10 is used in this country is from 18 to 20 ohms per mile. The resistance of good quality, averages very nearly the same. The ent qualities of iron wire vary as much as 25 per cent., and the is also true of copper, even to a greater extent.

G. M. W., III.—The longest circuit we have ever known of which was worked regularly and without repeaters, was about 850 miles. A circuit of 1,000 miles of well insulated line can easily be worked if the magnets and batteries are properly proportioned.

PERSONALS.

Miss J. A. NOURSE has accepted a position with the Pacific and Atlantic Telegraph Company, at No. 526 Broadway.

Miss PHANK S. TURNER has been appointed manager of the office of the Pacific and Atlantic Company, at No. 23 Wall street.

Mr. CHARLES T. DAY has resigned from the Franklin Company's New Haven, Connecticut, office, and accepted a position with the Western Union Company at Philadelphia.

Mr. M. DORE is operator Second Precinct, Metropolitan Police Telegraph, New Orleans, La.

Messrs. FRANK PETERS and D. RATTI are Metropolitan Police Telegraph operators for the Fourth Precinct, New Orleans, La.

Mr. LOUIS WOOLFERS is operator for the Fifth Precinct, Metropolitan Police Telegraph, New Orleans, La.

Mr. ROBERT CROFTON is operator at 48 Felicity Road, New Orleans, La.

Mr. F. FLYNN is operating at No. 42 St. Mary street office, New Orleans, La.

Mr. C. G. L. GOODWIN has been appointed Superintendent of Atlantic and Pacific Telegraph Company, First Division, from New York to Albany and Buffalo, with headquarters at New York for the present.

Mr. E. O. WAITE has been appointed Superintendent of the Second Division of the A. and P. Company, from Buffalo to and including Chicago, Ill., with headquarters at Chicago.

Mr. J. J. DICKEY has been appointed Superintendent of the A. and P. Company from Chicago to Ogden, Utah, with headquarters at Omaha, Nebraska.

Mr. F. L. VANDENBURGH has been appointed Superintendent of the Fourth Division of the A. and P. Telegraph Company, from Ogden, Utah, to San Francisco, Cal., and of all lines of the A. and P. Company on the Pacific Coast, with headquarters at Sacramento, Cal.

Mr. GEO. H. BOWKER, formerly with the Atlantic and Pacific Company at the New York Produce Exchange, has been appointed manager of Lockport, N. Y., office of the same company.

Mr. G. N. E. KIMBALL, of Portland, Me., has taken a position as operator in the A. and P. Company's office at Albany, N. Y.

Mr. J. F. McHUOH is at work in the A. and P. Company's office at Buffalo, N. Y.

THE TELEGRAPH.

(By Cable.)

REPAIRING OF DEEP SEA CABLES.

LONDON, July 5.—The steamer "Robert Lowe" sailed from here yesterday with apparatus on board for the repair of the Atlantic cable near Heart's Content, and the French cable between St. Pierre and Duxbury. This steamer has just been built by the Atlantic cable companies for the express purpose of repairing cables, and is fitted with the most approved appliances. She will be stationed permanently on the American side, in readiness for any contingency.

THE PANAMA AND WEST INDIA CABLES.

HAVANA, July 5.—Advices from St. Thomas to the first inst. announce the arrival there of the Panama and West India Telegraph Company's steamer "Titian."

Advices from Kingston, Jamaica, of June 24th, state that the telegraph steamer "Dacia" got afloat after discharging some of her stores. The laying of the cable will be immediately commenced.

The Telegraph in Australasia.

The Sydney Herald of March 25th says:

"The line to Gabo Island has been completed as far as the Spit, and the work is now in abeyance, pending the delivery of the iron poles required for its completion. It is expected that the lighthouse at Gabo Island will be brought into communication in the course of a month."

"The line to the Clarence River Heads has been finished, and stations were in the early part of the month opened at the Clarence River Heads and Rocky Mouth."

"The subject, as to the advisability of reducing the telegraphic rate between this colony and Victoria, is now under the consideration of the Government."

The Panama and West India Cables.

THE Kingston, Jamaica, correspondent of the New York Herald writes, under date of June 15th, as follows:

"The telegraph steamer Suffolk, with the laying gear and grappling machinery for the West India cable, arrived here on Saturday, the 11th instant, and has already commenced fitting up for the auspicious event. We had an opportunity of inspecting this fine steamer on her arrival, and of examining the sizes of cable with which she is laden. The Suffolk only awaits the arrival of Sir Charles Bright and the steamer Dacia from St. Thomas to commence the operation of laying. Sir Charles is momentarily looked for."

"Captain Gorman has arrived here on a special mission to the Haytian Government. He is authorized and empowered to negotiate with Sir Charles Bright (who holds the power of attorney for the Panama and West India Telegraph Company) for landing the cable at Jaelmel, on the southern coast of Hayti, on its way to St. Thomas. We understand the West India and Panama Telegraph Company are quite ready to meet the wishes of the Haytian Government, but they insist that the subsidy which Hayti offers for this telegraphic connection must be secured by English or American guarantees, and as Sir Charles Bright, on behalf of the company, expresses himself so decidedly upon this point, it is not unlikely that the Haytian Government are prepared to offer the desired security."

"The steamer Dacia, with the West India cable, thirty-seven members of a telegraphic staff and Sir Charles Bright on board, has just arrived. Operations preparatory for going to sea with the cable have commenced, and her Majesty's steamer Myrmidon sails for Santiago de Cuba this afternoon, as a pioneer of the cable expedition which is to unite this island with Cuba."

FOREIGN TELEGRAPHIC NOTES.

THE Falmouth, Gibraltar and Malta cable has been completed, and messages are now being transmitted by this direct submarine route. The following tariff has been announced for twenty word messages:

Aden.....	£2.08
Bombay, Calcutta, Madras, and stations west of Chittagong.....	2.17
Ceylon and stations east of Chittagong.....	3.01
Gibraltar and Malta.....	0.10
Portugal and Spain, all stations.....	0.09

The manufacture of the Australian cable is steadily progressing, the Batavia section having been commenced at North Woolwich. Information has been received in London that the South Australian Government will give every facility for the landing of the cable at Port Darwin, and the Government undertakes to introduce a measure, immediately after the new parliament meets, for providing, by means of a loan, for the construction of a line of telegraph from Port Darwin to Port Augusta. The South Australian Government will not only undertake the construction but the maintenance of the land line.

The British Indian extension cable is approaching completion. An alteration in the route has been determined upon, which will increase the length by about 80 knots, Madras having been selected as the point of departure instead of Ceylon. This is said to be in many respects a great improvement.

The China submarine cable, from Singapore to Hong Kong, is being progressed with at Greenwich.

The cable for the China and Japan extension of the Great Northern Telegraph Company is approaching completion at the works of Messrs. Siemens, at Carlton.

The Marseilles and La Calle section of the Marseilles, Algiers and Malta cable has been completed. The "William Corry," which has just returned from the British Indian cable expedition, and from picking up some cable in the Mediterranean, between Spezzia and Corsica, has been engaged to ship and lay it.

The "Great Eastern," after a most successful passage from Bombay, has arrived at Sheerness and taken up her old moorings. Her crew of officers and men have been paid off, and at present it is not decided what her next work will be.

At a meeting of the Electric and International Telegraph Company the proprietors passed resolutions for the granting of £10,000 to the directors and £1,000 to the auditors, as a recognition of the value of their services. It has also been decided to present the staff with a bonus of £5,000, which will shortly be distributed.

The Anglo-Mediterranean Telegraph Company have had their annual meeting, and have presented a most satisfactory report. During the year a sum of over £10,000 has been added to the reserve fund, for repairs and maintenance of the cable, representing 15 per cent. of the receipts for the past year. A dividend of 12½ per cent. per annum has been declared. In view of the expected increase of traffic it is proposed to double the

line from Malta to Alexandria, but at present nothing has been definitely arranged.

The bill by which the English Telegraph Acts of 1868 and 1869 are extended to the Channel Islands has been issued. It gives the Postmaster General power to purchase any of the existing lines to the islands.

New Lines.

Mr. ROBERT BROWN, telegraph contractor, has completed the National Company's line to Philadelphia. It works well—having been constructed in a substantial manner with American compound wire and Brooks' improved paraffin insulators.

Mr. Brown has also just completed an extension of the Manhattan Company's line to Newark, N. J. This line is built with No. 7 American compound wire, on Tillotson's screw glass insulators, with brackets, and is run on the poles of the National Company from Sixty-seventh street and Sixth avenue, New York, and using a spare cable wire of that company across the Hudson, Hackensack and Passaic river.

Telegraph Operator Found Drowned.

ON the Fourth of July the body of McLeod D. Lewis, a telegraph operator, late in the employ of the Franklin Telegraph Company at No. 11 Broad street, in this city, was found in the water, on the beach, about two miles below Bay Bidge, L. I. It is supposed that deceased, who had been missing for about ten days, was accidentally drowned, as his watch and money were found on his person.

Mr. Lewis was about thirty years of age, and very highly esteemed by those who knew him. He leaves a young wife, who is at present at Harper's Ferry, Va.

New Patents.

For the week ending June 14, and bearing that date.

No. 103 924.—PRINTING TELEGRAPH INSTRUMENT. Frank L. Pope, Elizabeth, N. J., and Thomas A. Edison, New York, N. Y.

Claim.—In a printing instrument the arrangement of two electro-magnets in the same electrical circuit, one being employed to rotate the type-wheel and the other to actuate the printing mechanism, when the action of the latter is controlled by that of the former by means of a branch or short circuit and a mechanical cut-off, or its equivalent, constructed and operated substantially as described.

2. An improved cut-off, which we term an electrical unison cut-off, whereby, at a given point in the revolution of a ratchet or type-wheel, a "shunt" or branch circuit may be brought into action, and the electrical current diverted from the electro-magnet controlling the movement of the said ratchet or type-wheel, so that the said movement may be arrested at such given point, the same being constructed and operated substantially as specified.

3. The electro-magnet R R' and soft iron bar T, in combination with a polarized steel bar, n, so arranged that said steel bar will be in magnetic contact with the said soft iron bar, substantially as herein specified.

4. The bar M, feeder N and N', either or both, spurs q and q', either or both, bed-plates O and O', either or both, combined, arranged and operating substantially as described and for the purpose specified.

5. The combination of the lever E, pawls F and F', stops S and J, and ratchet wheel G, arranged and operating substantially as described.

6. The combination of the pawl F, stop S, and ratchet wheel G, substantially as and for the purpose specified.

7. The electro-magnet R R', soft iron bar T, and polarized steel bar n, in combination with the spring i, insulated collar v, and pin or stud w, in the manner described, and for the purpose specified.

8. The combination, with an electro-magnet in a telegraphic printing apparatus, of a type wheel, whose periphery is provided with integral numbers, so arranged upon said type-wheel that fractions of numbers may be printed upon the paper, thereby decreasing the number of characters upon the type-wheel and insuring great rapidity in recording, substantially as herein shown and described.

9. In a printing telegraph a type-wheel, provided with letters, figures or characters, which are arranged in two different lines drawn around the periphery of said wheel, and in such manner that the said letters, figures or characters in the one line shall be opposite blank spaces in the other line, substantially as herein specified.

No. 104,345.—PRINTING TELEGRAPH INSTRUMENTS. William J. Phelps, Brooklyn, N. Y., and William J. Phillips, Philadelphia.

Claim.—1. The key q, in combination with the type wheel e, inking roller f, movable dial s, index r, friction roller k, and the mechanism for moving the type wheel e, all substantially as set forth, the whole constituting an apparatus whereby either the receiving or sending operator is, or both are enabled at will to print messages or receive them by the eye from the dial.

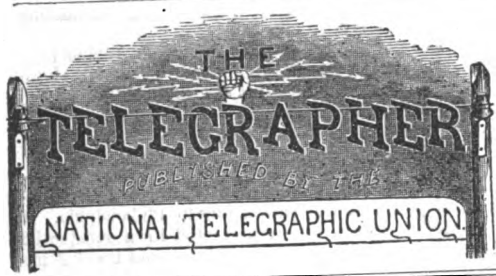
2. The movable dial s, in combination with the type wheel e and the index r, in the manner and for the purpose substantially as set forth.

No. 104,357.—FIRE ALARM TELEGRAPH APPARATUS. Edwin Rogers, Boston, Mass.

Claim.—In combination with several circuits converging at one point, circuit breaking and closing wheels, or equivalent devices, one for each circuit, operated by weights, springs or equivalent mechanism, to break each circuit from the one first broken, and to mechanically close each circuit, though the one first broken may remain open.

Recent British Patent.

No. 1445.—GEMINIANO ZACNI, Sidmouth street, Grays-inn-road, London. Improvements in magneto-electric telegraph apparatus.



SATURDAY, JULY 9, 1870.

J. N. ASHLEY.....Publisher and Editor.

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THE DUTIES OF TELEGRAPH EMPLOYÉS.

As the organ of the telegraphic profession THE TELEGRAPHER has consistently advocated the rights and claims of telegraphic employés. Its columns have ever been freely open to the statements of such employés, when they had, or believed they had, reason to complain of injustice or improper treatment from their employers. All such statements and complaints we have published, and shall continue to publish as a matter of right to its constituents. In so doing, however, we expressly disclaim any endorsement or responsibility therefor, unless otherwise editorially expressed in this department of the paper. On the other hand, our columns are as freely open to reply or refutation on the part of those attacked, if they shall see fit to reply and defend themselves. While some of their complaints are undoubtedly frivolous, or made under a misapprehension of the whole facts in the case, yet there is no doubt but that many of them are just, and expose evils which it would be for the interest alike of employers and employés to remedy.

In this connection we desire to remind our telegraphic friends once more that obligations and duties are reciprocal. They should be sure that they are themselves entirely in the right, and that their record is clear and unimpeachable. They owe to their employers certain duties, which should be scrupulously discharged. Two wrongs never make a right, and so long as the employé of a telegraph company retains a situation and receives compensation therefor, any unjust treatment received will not justify the neglect of the obligations and duties thereby assumed.

It is the duty of every employé to work for the time being earnestly and exclusively for the interest and benefit of the employer. We do not mean by this that an obligation exists for such employé becoming offensively partisan, but that the interests of the firm or company should be first and always considered. A telegraph company is in effect a public institution; business of great importance is necessarily confided to it, which it is essential should be faithfully discharged. The position of a telegraph operator is one of the most confidential character. Upon his diligence, honesty and faithfulness the patrons of telegraph lines are entirely dependent. Any neglect injures not merely the company but also its innocent patrons. In this telegraph employés owe a double allegiance—to the company and the public.

It is also the duty of telegraph employés to seek to do the business of the company as economically as possible. They should avoid unnecessary wastefulness and expenditure. Unless the business be profitable the employés must suffer. When the necessity for economizing arises it is but natural that telegraph managers should seek first to reduce the cost of labor. This may not

always be true economy, but all experience has shown that it is the direction in which a reduction of expenses will be primarily attempted. Self-interest, then, as well as duty, point to an economical and efficient administration of the business intrusted to their care.

Again, it is the duty of every employé to so regulate his or her personal conduct as to maintain the respectability and good name not only of the line or company, but of themselves individually. In this respect we think that, of late years, there has been a very great improvement. With occasional exceptions telegraph employés are now regarded as being equally correct in their habits and deportment with those engaged in any other profession. In the early days of the telegraph this could hardly be said; but, as the business has become systematized and settled, the class of dissipated and roving telegraphers, once so numerous, has steadily decreased. While we have no disposition to shield those amenable to censure in this respect, it gives us pleasure to bear witness to the generally excellent private character of the members of the profession. There are yet, of course, some black sheep among telegraphers, but these are generally well known to telegraph managers, and they are constantly finding it more and more difficult to obtain situations upon respectable lines. Good character, promptness and accuracy in the discharge of duties, have a pecuniary as well as moral value in the telegraphic as well as in other professions.

We believe that in these respects the influence of THE TELEGRAPHER has been of great benefit to the profession. While earnestly defending what is believed to be their rights and interests, it has led them to consider their importance to the great interests of the country and in the body politic, and has thus led them gradually but steadily to a higher plane of self-esteem and self respect, and secured to them the esteem and good will of their fellow citizens. This good work we hope to see continued for years to come—and if we may be permitted to think that we have, during our connection with the paper, aided therein, we shall consider that our labors have not been wholly in vain.

It is our earnest desire that the profession should be recognized and respected as one of the most honorable in which intelligent Americans can engage. To be a telegraph operator *should* be an assurance of intelligence and respectability, sufficient to insure reception in the highest social circles. It may be made such by the coöperation of telegraph employés and managers working together for their mutual interests and advancement. The strict and cheerful performance of reciprocal duties, mutual good will and kindness, would soon entirely change the present antagonistic relations between them, and crimination and recrimination would cease. Combinations and strikes would be alike unknown and unnecessary. Let each individual then strive, in so far as it is possible, to inaugurate this telegraphic millenium, and, whether it shall come or not, be personally assured that his or her whole duty has been done, and that the responsibility for the failure, if failure there be, is upon others.

The Darien Expedition.

THE United States ship Guard, of the Darien Exploring Expedition, arrived at this port Tuesday night. The U. S. ship Nipsic, of the expedition, arrived here several days ago. The expedition has completed its labors for the present, having failed to discover a practicable route across the isthmus for a Ship canal. The idea of a canal has not been entirely abandoned, however, as there are several routes that have not yet been explored, and if Congress makes the necessary appropriation the effort to find a route will be renewed next winter.

Messrs. HARRY CLARKE and CALVIN McDOWELL, of the telegraph corps attached to the expedition, returned in the Guard. Mr. A. J. GUSTIN, formerly of the Western Union office, 145 Broadway, remained at Carthage, and expects to get into business there.

Mr. CLARKE, notwithstanding the labors and exposures of the surveying parties, returns home in first rate condition, and is cordially welcomed by his numerous friends.

The telegraph proved of the greatest advantage to the expedition, and was highly appreciated by Commander SELFRIDGE and all the officers engaged. We have, from time to time, given such details as could be obtained of the telegraphic labors and experiences of Mr. CLARKE and his associates. The surveying parties were closely followed up by the telegraphic construction, and each night the surveyors' notes were telegraphed to the headquarters in the immediate vicinity of the vessels, thus enabling the Commander to plat out the day's work and follow the surveyors step by step. In this way they were enabled to accomplish much more in the same space of time than any previous expedition.

In view of the probability of a renewal of the exploration, seventeen miles of telegraph, from San Blas into the interior of the country, was left standing for future use, if required. We hope soon to be able to gratify our readers with a narrative of the experiences of Mr. CLARKE and his associates, and of their part in the great work of a survey of the Isthmus of Darien.

Taken Care of.

By reference to our "Personal" column it will be seen that the Misses NOURSE and TURNER, who were especial objects of vindictiveness on the part of the amiable (?) manageress of the ladies' department at No. 145 Broadway, have been appointed to good positions with the Pacific and Atlantic Telegraph Company in this city. It will no doubt please their former manager to know that they are doing much better than when they were subject to her capricious despotism. We congratulate them sincerely on their improved situation.

Electrical Phenomena in Nature.

THE following extract is translated from a paper by the celebrated Dr. MEYER, of Heilbronn:

All the phenomena of terrestrial motion, except volcanic action and the ebb and flow of the tides, are eventually derived from the sun. One of these, which we are about to consider more particularly, is an electric current on the surface of the earth.

That it actually exists is evident from the direction of the magnetic needle, as also from the immediate observations of Lamont; but as there can be no action without corresponding cause, it follows that this remarkable expenditure of electric effort must be attended with as large a compensation; we have then to consider our earth as being, in this respect, a huge and permanently efficient electric machine. I do not here refer to the local phenomena of thunder storms.

For a continuous source of the constant disturbance of electrical equilibrium in the earth's body we can only have recourse to the unceasing flow of air between the tropics, known under the name of the trade winds. The lowest layer of the trade wind assumes, by friction on the surface of the sea, an opposite electrical condition.

This air, however, heated by the sun, and dialogued by the colder current setting beneath it, rises and directs its course to the poles, where its high electric tension originates the beautiful phenomenon of the aurora.

It must now be observed that, on account of the physical condition of the earth's surface, the electromotive activity of the southern hemisphere must be throughout much stronger than in the northern; whence it happens that not only on both hemispheres, between pole and equator, but also between the north and south poles themselves, a continual disturbance of electric equilibrium occurs, and it is this by which the direction of the needle is determined. The narrow belt between the north and southeast trades—called by Dove the zone of calms—may be termed, for present purposes, the meteorological equator.

This is known not to coincide with the geographical equator, but to oscillate slowly about a limit of 1 to 1½ degrees north of it. The *experimentum crucis* for the theory—or, as we will only term it at present, the hypothesis—here adduced of the trade winds as the source of terrestrial magnetism, would consist in establishing that the known alterations which the magnetic pole as well as declination gradually undergo, are accompanied by parallel changes of our magnetic equator.—*Nature*.

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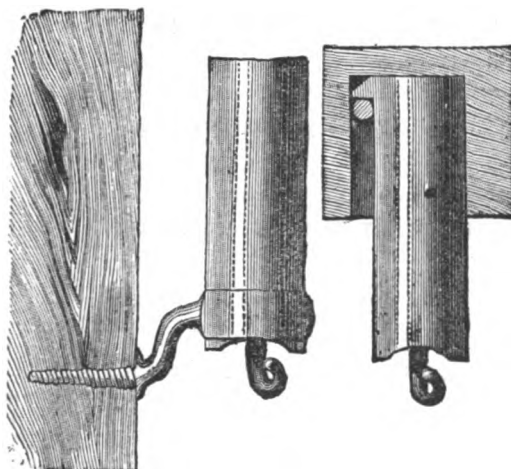
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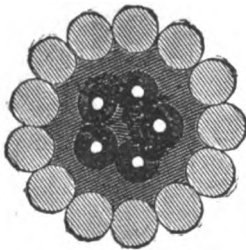
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We have, therefore, made arrangements not only to secure THE EXCLUSIVE AGENCY for its sale, for the purposes for which we have already sold it so largely, but to furnish complete

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of the usual size, with KERITE COVER, believing that it will exceed, in insulation for submarine purposes, ANYTHING HITHERTO MANUFACTURED.

We shall be happy to furnish estimates for any amount and size of cable, which will be found to compete with any other construction, both in quality and price.

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From Prof. SILLIMAN, of Yale College, Nov. 10, 1868.

"I am satisfied, as the result of my own researches, that ozone is by far the most fatal of atmospheric influences. I have submitted portions of KERITE to the action of a highly ozonized air for a sufficient length of time to prove them, and at the same time have exposed the best English Gutta-Percha Covered Cable to the same tests, with the following result: After long experience KERITE resists perfectly! The best English Gutta-Percha Cable was speedily destroyed. A few days' exposure to ozone would produce more effect than many years in a normal atmosphere, exposed to carbonic disulphide, nitric acid, sulphuric acid, sulphuric dioxide, nitric peroxide, chlorine gas and alkaline hydrates. Gutta-Percha is immediately dissolved in carbonic disulphide, and powerfully acted upon by alkaline hydrates. Some samples of KERITE resist the action of the former in a surprising manner, and are completely unaffected by the latter."

"New York, May 14, 1870.

"In nearly two years since the foregoing was written I have made a considerable number of experiments upon the KERITE Compound of A. G. DAY, all of which tend to confirm former results; while the practical test of the continued use of electrical conductors covered with it, and the growing favor with which they are received by electricians, offers the best guarantee of its permanent value."

*"B. SILLIMAN."**From MOSES G. FARMER, of Boston, Mass.*

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"The instrument used would have shown a current through 300,000 miles of Telegraph wire. The 195 feet showed no leakage in water. The KERITE insulated wire withstands atmospheric agencies wonderfully, and will last for years when exposed to the atmosphere; likewise, when buried in the earth, there is no reason to apprehend decay. It is a well known fact that Gutta-Percha deteriorates very rapidly when exposed to atmospheric influences, and therefore cannot be advantageously used for the covering of wire for out-door exposure unless buried in permanent moisture."

From Mr. E. A. CALAHAN, Supt. Gold and Stock Telegraph Co., May 14, 1870.

"Under all circumstances it has given me the fullest satisfaction. The peculiar nature of our business renders it necessary for us to use the most perfectly insulated wire. I have tried several kinds of insulated wire, but have been compelled to take down and substitute KERITE instead. Wire strung a year since is as good as the first day put up. Have tested it after three days' constant rain, and could not find one degree of escape. We use it in gas pipes, and sometimes placed near furnaces subject to very high temperature. I have not been able to detect the slightest change from its original condition."

"We have exposed it to the extreme cold and heat of the past two years and a half, strung over the roofs of buildings, which we consider the best test of its indestructible and insulating qualities."

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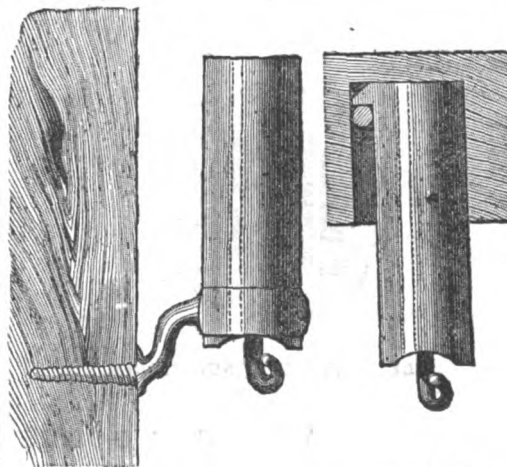
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FOR THE SPRING OF 1870,
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to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to

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which is much RICHER AND FINER than brass, he now presents his work in a style and of a quality that are unsurpassed.

His relays were awarded the

FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-160th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same.

He is also manufacturing the

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the cheapest, most reliable and simple repeater as yet invented

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Button Repeaters.....	\$6 00
Relays, with helices in bone rubber cylinders (very fine).....	19 50
Small Box Relays.....	16 00
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Main Sounders, some as the above, with heavy armature levers without local connections, 75 cents less.	
Pocket Relays, with all the adjustments of the above, and good Lever Keys.....	22 00
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All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package.

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THE TELEGRAPHER.

JOURNAL OF ELECTRICAL PROGRESS.

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New York, Saturday, July 16, 1870.

Whole No. 209.

THE MAINTENANCE OF THE BATTERIES.

BY DAVID BROOKS.

It is probable that the cost of maintaining the batteries used for telegraphic purposes in the United States could be reduced to one tenth of the amount now annually expended for this purpose, by the adoption of a simple and scientific voltaic combination, such as the one now in use by the French Administration, and by regulating the relative resistance of the lines, batteries and instruments in accordance with the well established laws of electric and magnetic action.

The battery especially referred to above is that known as "Callaud's," a modified and simple form of the well known Daniell. Its electromotive force is the same as that of the latter, or in comparison to the Grove, as 56 to 100. The first cost of the zinc and copper plates is only about half that of Daniell's, while the porous cup is dispensed with altogether. Taking these features into consideration, in addition to the fact that it will remain in action about twice as long, its great economy in comparison to the latter is at once manifest. The Callaud battery has a further advantage, in the fact that its care and management involves much less trouble than the Daniell, while the actual cost of maintaining the former is certainly not more than one fourth that of the latter.

LOCAL BATTERIES.

The apparent difficulties which have been experienced in using the Callaud battery for local circuits are owing simply to the fact that our sounders, registers and repeaters, as usually constructed, are not adapted to work well in connection with it—very few of them in fact being adapted even to the Daniell, although the latter is almost universally in use in this country as a "local." Most local magnets are made in such a manner as to develop the maximum force of one Grove cell. Such a magnet will only partially develop the effective force of a Daniell battery, and still less that of the Callaud. This fact is owing to the internal resistance of the batteries.

It is one of the fundamental laws of the electric circuit that the greatest effective force is developed when the internal resistance of the battery is equal to the sum of the other resistances in the circuit.*

This law admits of mathematical demonstration. The resistances of a single cell of the different batteries average approximately as follows:

Grove's.....	1 unit.
Daniell's.....	2 "
Callaud's.....	3 "

These figures refer to the ordinary Grove cell and to the Daniell and Callaud, when adapted to a jar eight inches high and six inches inside diameter. If we measure the resistance of the coils usually employed in the construction of sounders, registers and repeaters, we shall find the majority of them to be of about one unit resistance. The sizes of wire used vary from No. 20 to 23, Birmingham gauge, and the resistance from half a unit to four units. Now, in case it should be half a unit, one cell of Smee battery would have far more effect on such a sounder than one of Grove, although the electromotive force of the former, compared to that of the latter, is only as about 60 to 100. A comparison of the resistance in circuit will explain this effect. The resistance of the Smee battery is 0.33 units, which added to that of the sounder 0.5, gives a total resistance of 0.83 units. The electromotive force of the Smee, 60, being divided by this amount, gives 72.3 as the effective force of the arrangement. The Grove cell gives a resistance of one unit, the sounder as before, 0.5 units; total, 1.5 units. Dividing the electromotive force (100) by this amount, gives a quotient of 66.6. It will be seen, therefore, that under these

circumstances the Smee gives the greatest force, but it will not remain in action an hour. It soon "polarizes" and exhausts itself. The Grove will fail perceptibly from the start, losing about half its original force in twelve hours, and will require renewal within twenty-four hours at farthest.

Now, let us look at the effect produced upon the same sounder by the Daniell element, having two units resistance. The total resistance will be 2.5, and the electromotive force, 56, divided by the resistance, gives only 22.4 less than one third of that of the Smee. The effect with the Callaud element is still less. Its resistance is three units, which with sounder, 0.5, gives 3.5; electromotive force 56, and effective strength 16—not one fourth that of the Smee or Grove, which is of course, wholly insufficient. If we use two Callaud's we have a total resistance of 6.5, and an electromotive force of 112, giving a strength of 17.2. The increased effect is therefore scarcely perceptible.

Now, if we take the same sounder, remove the coarse wire coils and rewind it with a smaller sized wire, so as to give a resistance of six units, this increased resistance is compensated by the increased magnetic effect of so many additional convolutions of wire around the cores, if the proper battery combination is employed. Such a sounder would give the greatest possible effect obtainable from two Callaud cells an effect which will be found amply sufficient for all practical purposes, either as a sounder, register or repeater. It can be used equally well with the Grove, the Daniell, or any other, except that they will not remain in action as long as the Callaud. A calculation of the comparative effects with this sounder of six units gives the following result:

2 Callaud.....	9.3
2 Daniell.....	11.1
1 Grove.....	14.3
2 ".....	25.0
1 Smee.....	9.4
2 ".....	18.0

In the above calculation the resistance of the Daniell is given as two units. It is actually over three, except when the porous cell is defective or so excessively porous as not to separate the liquids properly. The Callaud is also given as three units, but in point of fact it does not exceed two after it has been two weeks in use.

A sounder constructed so as to give a resistance of six units, will develop all the power required. It possesses another advantage, in the fact that when this amount of resistance is in the circuit there is little or no spark at the relay points—a phenomenon which sometimes occasion considerable annoyance when the resistance in circuit is inconsiderable.

The resistance of the Callaud cells is very uniform, while different cells of the ordinary form of Daniell will often vary materially under precisely similar conditions. Sometimes, owing to differences in the quality of porous cups, one cell will measure as much as ten units and another only two. A cell of high resistance will diminish instead of increasing the effect in a local circuit.

The resistance of any battery is not so much an objection when properly understood, inasmuch as it serves to prolong its action. A battery of low resistance is soon exhausted. The writer has adopted a number of sounders to the Callaud battery, and in every instance the force developed was all that could be desired. It is better, for obvious reasons, to have merely sufficient power than to have too much.

As previously stated, most of the sounders tested give a resistance of about one unit. The instrument maker has found by trial and experiment that this is the form that will give the greatest effect with one Grove cell, and therefore infers that he has hit upon the best possible model for a sounder. The battery required, however, is expensive. A Grove cell must be renewed every twelve

hours. A Daniell cell is comparatively useless when applied to such a sounder.

If we estimate the resistance of the Grove cell as one unit, the Daniell two, and the Callaud three, the forces produced upon the above sounder by each of these different batteries will be as follows:

	1 cell.	2 cells.
Grove.....	50.0	66.6
Daniell.....	18.6	22.4
Callaud.....	14.0	16.0

Connecting the two positive poles to one terminal and the two negative to the other, they become in effect one large cell with half the original resistance. We then have the following relative effect:

Grove.....	56.6
Daniell.....	28.0
Callaud.....	22.4

This is not by any means an economical arrangement, and merely serves to show that the sounder is not adapted to the battery. The Grove will not in this case last half as long as when connected in the usual manner.

If the sounder is wound with a smaller wire, interposing a resistance of six units, the relative differences will not be so great. With one cell the effect will be:

	With 1 cell.	With 2 cells.	2 cells double, to lessen resistance.
Grove.....	14.28	25.0	14.6
Daniell.....	7.00	11.2	8.0
Callaud.....	6.22	9.3	7.4

MAIN BATTERIES.

It is customary in this country to employ as many as fifty Grove cells to operate a line of 100 miles of No. 9 wire. The average resistance of a line of this description is about twenty units per mile. If, therefore, we estimate—

Resistance of line.....	2,000 units.
" " battery.....	50 "
" " 2 magnets, 60 units each....	120 "

Total resistance.....2,170 units.

Their electromotive force is 5,000, and the working current of magnetic effect will therefore be $\frac{5000}{2170} = 2.30$.

If now we substitute 100 cells of the Callaud battery, the electromotive force will be 5,600 and the resistance 300. We now have:

Resistance of line and two magnets..	2,120 units.
" " battery.....	300 "

Total resistance.....2,420 units.

The magnetic effect will be $\frac{5600}{2420} = 2.31$. The difference is inappreciable.

Now, if magnets of finer wire, having four times as many convolutions in the same space, be substituted for the above, they will have a resistance of, say 1,000 units each, but the magnetic effect with a current of equal strength will be four times as great. In this case, with the Callaud battery the resistances would be as follows:

Line as before.....	2,000 units.
Battery.....	300 "
Magnets.....	2,000 "

Total.....4,300 units.

The magnetic effect will now be $\frac{5600}{4300} = 1.30 \times 4 = 5.20$, or two and a quarter times as much as with the magnet of low resistance. If we reduce the number of cells in the battery one half, we still have an effect of 2.68, a gain of 15 per cent. over the original arrangement.

If the line were 1,000 miles in length instead of 100 the gain, by using the high resistance magnets, would be in still greater ratio. With two and a half times the bat-

* See Sabine's *Electric Telegraph*, p. 262; also Pope's *Modern Practice Elect. Tel.*, p. 125.

tery power, or 250 cells, we could produce a magnetic effect of 2.44 through such a circuit, while with magnets of sixty units we only get an effect of 2.33 through 100 miles.

There is no difficulty in working a No. 9 wire 1,000 miles at full speed in favorable weather, when insulated with the common glass, provided the batteries and relays are adapted to the circuit; nor is there any difficulty in working a wire of the same length at full speed during rain with the patent paraffin insulator.

The writer would be very happy to contract to maintain this degree of insulation upon such a line, for a much smaller sum per annum than is expended in replacing broken glass insulators.

There is a general tendency at the present time to endeavor to obtain a *working margin* upon telegraph lines, by reducing the resistance of the conductor. Instead however, of accomplishing this by using wire of greater conductivity than No. 8, the method now in favor is that of using relays having comparatively few turns of coarse wire. In order to carry out this theory a large amount of battery power is indispensable, as well as repeaters and their attendance at short intervals, involving great unnecessary expense, aside from the amount lost from the delays in transmission, which are themselves difficult to estimate.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, July 12.

TO THE EDITOR OF THE TELEGRAPHER.

THE present session of Congress is about at an end, and with one more communication I shall gladly close the series of letters with which your columns have been so long burdened. Much as your readers may be pleased at the relief from my dullness, their pleasure will be slight compared to mine at the release from the necessity of inflicting my weekly epistles upon them. Washington is not a desirable place of residence in midsummer. Almost every one is impatient for the close of the session and a chance to get away.

So much business is crowded into the last days of a session of Congress that telegraphic matters have but little chance for attention. A few of the more persistent telegraph schemers hang about the capitol, in the hope that in the closing hours something in their favor may slip through, but there is little probability of success. W. S. Worl may be seen hanging around the capitol, and button-holing members on behalf of his scheme for a cable by way of the Azores, but there is not the slightest chance for aid being granted to any cable scheme.

Mr. Cyrus W. Field still keeps up his raid on the Cuba Cable Company, but has not thus far achieved any brilliant success.

In the House of Representatives, on Monday, Mr. Sanford introduced a resolution repealing so much of the Act of May 5, 1866, as gives the International Ocean Telegraph Company (Cuba cable) an exclusive right to land, work, and maintain cables from the shores of Florida to the Cuba, Bahama, or other West India Islands. This was referred to the Committee on Commerce, and will not again be heard from during this session.

Mr. Bingham introduced on the same day a bill to incorporate the Loomis Aerial Telegraph Company. It is to be hoped that this may get through without opposition. If anybody has money to invest in the project, they will no doubt find their profits and capital both of a very aerial character.

The sub-committee of the House Committee on Commerce to-day took up the investigation of Mr. Field's charges against the International Ocean Telegraph Company. Mr. Field, who wants their charter summarily repealed, was in attendance, and led the attacking forces, while Gen. W. F. Smith and his counsel were on hand to defend the company. It was soon evident to the committee that the investigation could not be gone through with during the present session, and it decided to ask from the House permission to sit and continue the investigation during the recess.

Subsequently Mr. Ingersoll, the chairman of the sub-committee, made two attempts to get the desired resolution passed in the House, but failed. The fact is that members of Congress are heartily sick and tired of this whole telegraph business, and especially of the quarrels between telegraph companies who seek to destroy each other.

CAPITOL.

A Defence of Mr. R. B. Hoover.

NEW YORK, July 9.

TO THE EDITOR OF THE TELEGRAPHER.

In your issue of July 2d I notice an article dated Pittsburg, in which the character of R. B. Hoover is most shamefully traduced. I have been intimately acquainted with the gentleman from my earliest recollections, and been connected with him in business relations for some twelve years, during which time I have never known him to be guilty of an ungentlemanly act.

His action during the recent strike, although denounced by all at the time, was in my opinion justifiable—and I think all just operators will agree with me when the circumstances are explained.

Some time in November I asked Mr. Hoover's permission to propose his name as a member of the League. His reply was to the effect that he first wished to become better acquainted with the objects and intentions of the League before taking a step which he might afterwards regret. Without again consulting Mr. Hoover I proposed his name and paid his initiation fee, thinking that after he had been balloted for he would not object to being sworn in. When I informed Mr. H. of my action he expressed himself as very much dissatisfied, and said he did not know whether he would allow himself to be sworn in. Whatever his objections were to taking the oath on the Sunday referred to in "Divan and Dragon's" communication, I am unable to state them, not being present at the meeting.

On the afternoon of the third, when I requested Mr. Hoover to take part with the boys, he informed me that although his sympathies were with us yet he would be compelled to remain in his office. Knowing his circumstances I could not object to this, and only requested him not to go to Pittsburg to work unless his Superintendent gave him the choice of either doing so or resigning. This course he pursued, and at the time expressed deep regret at the necessity which compelled him to be against us. He not being a member of the League, and his name having been proposed without his consent, I do not think, under the circumstances, he should be so unjustly censured merely on account of petty jealousy existing in the small body of your Pittsburg correspondents. Mr. Hoover certainly deserves credit for being the originator of the first and only testimonial every offered to Prof. Morse by the American people, and in this has shown his brains to be far more "fertile" than those of "Divan and Dragon."

I make this statement only to do justice to Mr. Hoover, and, as Pittsburg's cider champion says, "place him in a good light," and feel confident that all friends of Mr. Hoover, as well as my own personal friends in Pittsburg office, will verify the above statement. E. W. COGLEY.

Morse Testimonial.—Dissatisfaction.—The Southern Telegraph Opposition.

WASHINGTON, D. C., July 11.

TO THE EDITOR OF THE TELEGRAPHER.

MR. J. D. REID has misunderstood the criticisms of the employés of companies outside of the Western Union in regard to the Morse testimonial, as far as he is personally concerned. We are not dissatisfied with him as Treasurer, but, on the contrary, we are perfectly content that he should act in that capacity. What we objected to as unjust was, that after the testimonial was made National its character, we had no representatives upon the executive committee. This has been in part remedied, and further action in that direction having been promised we await future developments.

Mr. Orton, President of the Western Union Telegraph Company, has again made his appearance at the capitol—not now in the interests of that company, as it is understood, but opposing the confirmation of certain New York official appointments. His efforts in that direction do not seem to have been particularly successful.

The Bankers and Brokers' Company will open a new office in the office of the American Press Association, on Fourteenth street, about the 15th inst.

Considerable dissatisfaction seems to be springing up among the cooperators on the B. & B. lines. They claim that the company has not fulfilled its agreement with them. No statement of the business has been made, as was agreed. They have waited patiently for the statement, and the second quarter has passed and the statement for the first quarter has not as yet been made—which, under the agreement with the company, should be furnished monthly. Who is to blame for this neglect? Five months ago it was claimed that there was \$2,500 ahead, and very recently the Superintendent said he would be glad if he could carry the company through without loss. Whatever the result may be the statements should be furnished as agreed. Some time since a movement was started to call a meeting of the operators to take some action in this matter, but it fell through on a

promise that a statement should soon be made. It is desirable that a meeting should be called now, and a compliance with the contract in this particular be demanded.

The adjournment of Congress will, as usual, be followed by a reduction of the Western Union force here. As good operators are not very plenty just now there will probably be little difficulty in locating all whose services are not required here.

Mr. A. J. Baldwin, the constructor of the new Southern line, states that with all the obstacles thrown in his way by the Western Union Company he has succeeded in carrying his point in every instance, and the Western Union managers have virtually abandoned further interference with him, and he does not anticipate further trouble from that source.

PERDU.

Plain Talk by a Disgusted Striker.

COUNCIL BLUFFS, IOWA, June 28th.

TO THE EDITOR OF THE TELEGRAPHER.

I HAVE been a constant reader of THE TELEGRAPHER since its birth, with the exception of two years that I was not a subscriber, and I have thus far refrained from exhibiting myself in its columns, and have done this because it has always been filled with a better quality and more interesting matter than I thought myself capable of contributing, but I can forbear no longer. Since the strike it has been read with unusual interest by me, for through its columns one can see with unerring certainty the very thoughts that fill the minds of the working part of the telegraphic fraternity throughout the country, and actuate their petty, futile desires for revenge upon the Western Union Company. This is not so much to be wondered at as the public method they take of showing it. Having just met with a most disgraceful and cowardly defeat of their first attempt to assert their claim to respect from, and a place among the intelligent and scientific labor of the country—cowed down by fear—they attempt, by screening themselves behind some classical ill-spelled signature, through the columns of THE TELEGRAPHER, with a system of "ventilation," as they call it, to throw small stones at the Western Union Telegraph Company, which the company neither feel nor notice.

It seems to me that a better course than this might be pursued with better results.

I can recollect when THE TELEGRAPHER was not used for such purposes—when its columns were better filled with interesting matter to all telegraphers. If it were doing us any good it would be altogether different. There certainly needs be a great reform in telegraphic matters.

There is a portion of this reform that cannot be made by telegraphers alone, but I think the greater part of it, and the part that most nearly concerns them as individuals and as a class, can be made by them without any opposition whatever from their employers, and possibly when that is done the remaining part may be more easily worked out; at all events, I can see no benefit to be derived from a silly abuse of the Western Union or any other telegraph company, at least until such time as operators as a class shall make themselves as much respected by many actions and general deportment among the people as the companies themselves have.

We may talk and growl all we please, but that does not alter the fact that the Western Union Company to-day stands as high in the opinion of its customers as any incorporation for public service in the country. Why? Because their chief study is to do business in a business like manner and please their customers.

Any of us who have worked under their stringent rules know this to be the case.

That they treat operators with but little consideration no one perhaps knows better than I do; but this we cannot attempt to control. Let us first make ourselves worthy of better treatment before we presume to ask it.

There is a great complaint because salaries have been reduced. We all know that salaries are too small, but still I think there is no telegrapher in the Western Union service (where the complaint comes from) who could not live comfortably on the salary paid him by the use of a little more economy and considerable less whiskey. If we make brutes of ourselves socially, we can only expect to be treated as such generally by those who come in contact with us.

In a late number of THE TELEGRAPHER some correspondent asks, "Why can we not have another organization?"

If there be any who have not had enough of "organizations," there certainly should be some means of gratifying them, and I suggest that a scheme be set on foot for an "organization" to improve the moral status of telegraphers. That each one joining said "organization" be required to swear solemnly upon the Holy Bible, "and before these witnesses," that forsaking all allegiance to clubs or individuals, his actions as a man are alone ac-

countable to him; that he "will never taste of the drunkard's draught forever," and will give his time and services, if need be, to the promulgation of good among his fellow operators. Thereby better fitting himself and them for the responsible positions they ought to occupy as telegraphers among the people. M. A. SMITH.

ANSWERS TO CORRESPONDENTS.

J. S. G., *Maryland*.—This correspondent says that it frequently happens that he can get circuit either east or west by the use of ground wire, but none when ground is taken off, and desires an explanation. This effect is always produced when one of the main batteries on the line is "reversed," or in other words when the main batteries are placed in circuit each with the same poles to the line. This frequently happens in cases where a slide line or branch is arranged to work in circuit with the main line east or west of the junction by means of a switch. The reversed batteries neutralize each other till an intermediate ground is put on, when each battery forms a circuit of its own, the influence of the opposing battery being cut off by the ground wire.

PERSONALS.

Mr. GEO. W. HAYWOOD, formerly of Detroit, Mich., has accepted a position in the Cleveland, Ohio, office of the Atlantic and Pacific Telegraph Company.

Mr. ERASTUS D. MOORE, formerly of the Quincy, Ill., office of the T. W. & W. R. R., has been appointed manager of the Pacific and Atlantic Co.'s office at Keokuk, Iowa.

Mr. NAPOLEON CARON has been appointed operator to the Superintendent of Police at New Orleans, La.

Mr. W. H. HARRINGTON has resigned the position of chief operator of the Chicago and Northwestern Railway lines, and manager of the Western Union office at Clinton, Iowa, and proposes to quit telegraphing and engage in other business.

Mr. JOSEPH E. HURLEY, operator, has been transferred from the Braeside, Ontario, to the Caledonia Springs office of the Montreal Telegraph Company.

Mr. JNO. A. McDONALD, formerly of O'Hawa day force Montreal Telegraph Company, has resigned, and accepted a position as operator at Greenville.

THE TELEGRAPH.

(By Cable.)

THE PANAMA AND WEST INDIA CABLES.

HAVANA, July 11th.—A telegraphic despatch from Cienfuegos announces the arrival at that port yesterday of the Panama and West India Cable Company's steamers Dacia and Suffolk, and the British man-of-war Vestal. The work of laying the cable will be immediately commenced by the Dacia and Suffolk.

New Offices on the Great Western Line.

NEW offices have been opened at Peoria, Henry and and Chillicothe, Illinois, on the Great Western Telegraph Company's line.

TELEGRAPHIC BREVITIES.

MR. R. S. CULLEY, engineer of the Postal Telegraph in Great Britain, has ordered from the Western Union Company some of their latest and best patterns of American sounders.

An Indiana man attached his lightning rod to the Western Union Telegraph wire, "in order," he said, "to relieve the rod should it become excessively charged with electricity," and succeeded in relieving the line of a number of despatches before the cause was discovered.

Dr. Stölzel gives what he considers an excellent, cheap and durable substitute for the copper cylinder in Daniell's battery. A piece of well polished sheet tin is immersed in a very dilute solution of a copper salt and put in connection with a weak galvanic current. After the lapse of from fifteen to eighteen hours a layer of firmly adhering copper is deposited upon the plate, which may now be bent into the required form.

Safety in Mines.

FORTUNATELY for our miners fire damp is a source of much less danger in coal mines in this country than abroad; but the means devised to prevent explosions are always of interest, from both a practical and a scientific point of view. A recent English patent covers a novel application of electricity to this purpose. The inventor employs a current or currents of electricity, passed through wires arranged within the mine. At intervals the conducting medium is interrupted, and the current being of sufficient strength, the consequent evolution of heat at such points insures the ignition and consequent explosion of the gas—this, of course, being done before the entrance of the workmen to the suspected portions of the mine.—*American Artisan*.

FOREIGN TELEGRAPHIC NOTES.

It is understood that application has been made in England for letters patent for constructing a cylindrical iron kerb, for reception, repairing and maintaining telegraph wires, to be of the same external form and size as the stone kerb now in use.

Telegraphic communication has been resumed with the Scilly Islands, and it is hoped that, from the construction of the new cable with Hooper's Cove, communication will be maintained for the future free from interruption.

Telegraphic despatches from China, received at Bombay, June 26th, announce that permission has been obtained at Peking to carry the China submarine cable to Shanghai, provided the end is not landed.

The erection of the telegraph posts and wires has commenced through the streets of Kingston, Jamaica, and is making rapid progress towards completion.

An indignation meeting in reference to the telegraph service in Ireland was held by the Dublin Chamber of Commerce. It was decided to send a deputation to Mr. Gladstone on the subject, the meeting deeming the statements of the Marquis of Hartington, in the House of Commons, "unsatisfactory, and evasive." A letter was read from Mr. Baines, of the Dublin Post-office, stating that the Government intends to lay down a new cable of seven wires between England and Ireland, with corresponding land wires, to put the existing cables in a state of thorough repair, and to introduce a new and improved instrument in Ireland, by which seventy or eighty words a minute can be telegraphed.

A Musical Jubilee.

BELVIDERE, Illinois, stimulated by the success of the Boston Jubilee, has been having a musical Jubilee of its own, which appears to have been a success. *The Belvidere Northwestern*, Jubilee edition, says:

"The electrical apparatus, wires, battery, &c., used in firing the cannon at the Jubilee, were from the well known telegraph supply depot of Bliss, Tillotson & Co., of Chicago, and under the management of Mr. M. W. Goodyear, electrician of that firm. The method of attaching the wires to the fuses, and the construction of the fuses used are an invention of Mr. Goodyear's—were used for the first time on this occasion, and are pronounced a complete success by all who saw them used. They can be attached to the battery and the guns made ready to fire in two seconds."

The Telegraph in Salvador, Central America.

WE have been favored with a call from Mr. CHARLES H. BILLINGS, formerly of the Bankers and Brokers' Telegraph Company, in this city, but now the constructor and General Superintendent of the lines of Government telegraph in Salvador, Central America. Mr. BILLINGS will be remembered by many of the fraternity as an efficient and reliable operator and genial companion. He went to Panama about two years since as an operator on the Panama Railroad line, and from his connection there became known to the Salvadorian authorities, and was engaged to construct and superintend the new line of telegraph in that Republic.

The initial line was commenced in February last between the capital of the Republic and its principal port, La Libertad, and was completed on the 26th day of April, and has proved a success, pecuniarily and otherwise.

The Salvadorian Government has given Mr. BILLINGS a contract for the construction of another line from the capital to the port of Acajatal via Santa Ana, Anachapam and Sousouate, a distance of 132 miles. Contracts are also being made with him for a line from La Union to the capital, via San Miguel and San Vicente, a distance of 175 miles; and one from the capital of Salvador to the City of Guatemala, a distance of 200 miles.

Mr. BILLINGS visits this country to purchase materials for these lines, and will remain about a month. The material for the first of the lines will be forwarded immediately.

Much Needed Reform.

WE are glad to hear that the Bankers & Brokers' Telegraph Company, and also the Pennsylvania, Reading and other railroads have commenced overhauling their sounder magnets, in order to bring them into proper relation with the batteries employed. This will prevent a great waste

of material. There is no economy in ignoring scientific knowledge, and we hope that the progress of improvement, commencing in small matters, will gradually extend throughout the whole business. There is plenty of room for reform in both small and great matters.

Still Another Desertion.

MR. B. A. SQUIRES, former General Superintendent of Mississippi Valley Company, lately of Duluth office, whose resignation we noticed a few weeks since, has been appointed by the Citizens' Dock Company, of Duluth, Superintendent of their Long Dock, extending into Lake Superior, and will have full charge of the large warehouses and general business connected therewith.

New Patents.

For the week ending July 5, and each bearing that date.

No. 105,042.—ELECTRIC BATTERY. Théophile Chataux, Paris, France.

Claim.—1. The division, in electric batteries, of the jar or cell containing the exciting liquid into two compartments, communicating with one another by an aperture near the bottom of the jar, as has been described and shown in the drawing.

2. The combination, in electric batteries, of a vessel containing exciting liquid in reserve, with the jar or cell in which is the liquid acting on the elements, and with the contrivances used for immersing or withdrawing the zinc from the exciting liquid, so as to operate or arrest the action of the battery, as desired, and to cause the impoverished portion of the liquid to flow off, as has been described, set forth and shown.

No. 105,043.—ELECTRIC BATTERY. Théophile Chataux, Paris, France.

Claim.—1. The arrangement of the cells one above the other on a horizontal or vertical frame, as described and set forth.

2. The combination of zinc and iron in electric batteries, the iron in the upper half of the cells and the zinc in the lower half of the same, as described and set forth.

No. 105,060.—TELEGRAPHIC PRINTING APPARATUS. Theodore M. Foote and Charles A. Randall, Brooklyn, E. D., N. Y.

Claim.—1. A compound helix, consisting of three pairs of electro-magnets, C¹ C² C³ C⁴ C⁵ C⁶, arranged in relation to each other as described, and having a switch bar, F, passing through the core of the middle pair C³ C⁴, substantially as set forth.

2. The double pallet c, oscillating between the teeth of the ratchet wheels e, f, on the type wheel shaft a, in combination with the magnets B¹ B², substantially as and for the purpose described.

3. The oscillating anchor y and pins w, z, in combination with the type wheel shaft, and with the printing lever, or any part connected to the same, substantially as and for the purpose set forth.

4. A paper feeding mechanism, composed of elastic rollers, or an oscillating foot acting on one elastic roller, and operated from the printing lever of telegraphic printing apparatus, as herein described.

5. The mechanism, substantially as herein described, for moving the type wheel, first when the main circuit is closed, and then when the main circuit is opened, consisting of a pair of magnets B¹ B², which are thrown in the circuit of the local battery when the main circuit is closed, and another pair of magnets, B³ B⁴, which are thrown in the circuit of the local battery when the main circuit is opened, as set forth.

6. The combination of the printing lever with the unison mechanism and type wheel shaft, substantially as described, whereby the type wheel shaft, after having been arrested by the unison mechanism, is liberated by the action of the printing lever, or any part connected to the same.

For the week ending July 12, and each bearing that date.

No. 105,252.—BATTERY INSULATOR. Orris W. Robertson, Milwaukee, Wis.

Claim.—1. A glass insulator, with body, C, and cap, D, substantially as described.

2. Insulator C, cap D, curtain E and projections F, substantially as described.

No. 105,274.—ELECTRICAL THERMOSTAT. George Miller Sternberg, Fort Riley, Kansas.

Claim.—1. A thermometer, constructed with a prolongation of its tube below the bulb a, in which is hermetically sealed the wire c, and with the dilation b and the adjustable wire d, substantially as and for the purpose hereinbefore set forth.

2. A thermometer, constructed with the dilations b and b', and the hermetically sealed wires b and d, substantially as and for the purpose hereinbefore set forth.

MARRIED.

CASE—LEAL.—In this city, at the residence of the bride's sister, June 28, Mr. JERRY G. CASE, of the Franklin Telegraph office, to Miss SARAH M. LEAL, all of this city.

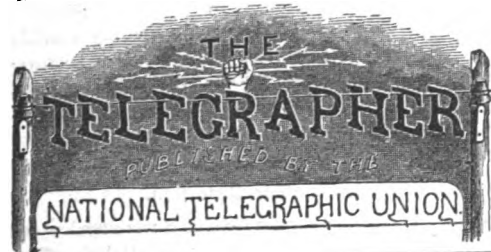
DIED.

WRIGHT.—In San Francisco, July 8, GEORGE W. WRIGHT, city editor of the *Alta California*, formerly connected with the Western Union Telegraph expedition.

F. W. SCULL.—At Baldwin, Fla., June 29, 1870, of consumption, F. W. SCULL, manager I. O. T. Co.'s office.

Obituary.

MR. SCULL (formerly of New Jersey) entered the service of the International Ocean Telegraph Company as Manager, at Baldwin, early in 1868. He was an efficient telegrapher of long experience, a good friend, faithful to the interest of his employers, and justly merited the good will of his associates in circuit. We deeply mourn his loss. T.



SATURDAY, JULY 16, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE
NATIONAL TELEGRAPHIC UNION.

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THE POSTAL TELEGRAPH.

Mr. WASHBURN's report, as Chairman of the Select Committee on the Telegraph of the House of Representatives, has not as yet reached us, and we are, therefore, not prepared to give a synopsis even of the document. It is, of course, merely an argument in favor of the project of a postal telegraph system for this country similar to the one recently adopted with such general dissatisfaction in England. The committee was originated and appointed, not for the purpose of fairly and impartially investigating the telegraph system of this and other countries, but to manufacture arguments in favor of a system which Mr. WASHBURN and his co-operators are determined if possible to impose upon the country. It is to be presumed that the committee has done its work well, and that when the argument of its chairman appears it will prove to be the best that can be presented on that side of the question. It is also intended to offset the able and exhaustive report made by Mr. FARNSWORTH, as Chairman of the Committee on Post Offices and Post Roads, to the preceding Congress, after a prolonged and thorough examination of the same subject, against any interference by the Government in the business. Mr. FARNSWORTH's able report was a blow from which the postal telegraph advocates have never recovered, and convinced the great majority of the newspapers and the public of the expensive and unadvisable character of the project they were asked to support.

As we desire to be perfectly fair in the discussion of this question, which is of such paramount importance to the telegraphic profession, the people and the public treasury, we propose, as soon as possible, to give a synopsis of Mr. WASHBURN's report in THE TELEGRAPHER. We believe his arguments and his statistics to be equally fallacious, and that there is little probability of Congress being deluded or wheedled into the sacrifice of the people's money necessary to enable this project for practically destroying the telegraph business of the country to be carried into effect, but such as they are we are perfectly willing to give them the benefit of our circulation.

In this connection we notice a letter of Mr. CYRUS W. FIELD to Mr. WASHBURN, favoring this Government telegraph business, is being published in advance of the report.

We are surprised to find Mr. FIELD endorsing this folly. It is beyond our understanding how a man of Mr. FIELD's telegraphic experience can endorse such a project. It is true he informs us that he has no interest in any telegraph enterprise in this country, and it may be that he believes his telegraph lines in Newfoundland would be benefited by such a reduction of tolls on American lines as is proposed by Mr. WASHBURN. He should remem-

ber, however, that this Government telegraph business, if inaugurated in this country, would soon be extended to Newfoundland, and his line would be taken from him and his associates by the Dominion Government. Does he desire to see the lines in the British Provinces also become Government property?

While Mr. FIELD endorses generally Mr. WASHBURN's postal telegraph scheme, he has the honesty to concede that the business is not likely to prove even self-sustaining in Government hands. Not only would the original purchase money be sunk, but, as we have always asserted would be the case, he believes that the working expenses would entail a considerable annual expense upon the Treasury. This he thinks would be compensated by increased telegraphic facilities afforded to the public. It should be understood, once for all, that the public do not ask for this transfer of the telegraph to irresponsible Government officials, and do not desire to assume the expense. It is a movement inaugurated and maintained by a few members of Congress and other interested parties. If the public really demanded it the case would be very different.

We regret that Mr. FIELD should have seen fit, for any private reasons, to lend the influence of his name in favor of a Government assumption of the telegraph. Thus far he is the only telegraph man of any importance or prominence in this country who has favored it. We hope he may continue to stand alone among prominent American telegraphers in the position that he has taken.

Supply and Demand.

As a consequence of the unfortunate termination of the strike, a number of first class operators left the business to engage in other more satisfactory employments. Besides this, there has been for the last two or three years a steady depletion of the ranks of first class operators, other lines of business holding out to such superior inducements to those offered in their legitimate profession. The extension and increase of telegraphic facilities has also absorbed a good many operators—and all these causes combined have resulted in a scarcity of really good operators.

The managers of the Western Union Company were prompt to take advantage of the strike to reduce salaries from ten to twenty per cent. Now that company, especially, is hard put to it to obtain competent operators to work its lines. Intimations are given to those strikers whose names were placed on the blackest of the black lists, among the doomed to everlasting exclusion from Western Union employ, that their offences will be condoned and situations given to them, if desired.

We would say to all first class telegraph operators that they have now an opportunity to reciprocate the kindness displayed in the enforced reduction of salaries. Don't be too much in haste to accept the first offer that is made. *First class operators and first class positions* should command *first class salaries*, and will do so if the operators stand upon their rights. It needs no League combination to effect this—merely that each person open to engagement shall understand the situation and regulate his demand for salary accordingly.

We do not wish it to be understood that there is a scarcity of all classes of operators. Of college graduates and other plugs there is always an over supply. It is only the better class of operators that is in extraordinary demand for situations which cannot be sacrificed to the dupes of so-called telegraph colleges and institutes.

The Morse Testimonial.

THE recent discussion of the origin of the proposed testimonial to Prof. MORSE, and of the antecedents of its originator, Mr. R. B. HOOVER, of Allegheny City, Pa., has created quite an excitement in telegraphic circles. Under our "Correspondence" head we publish a defence of Mr. HOOVER by a personal friend, and we have been

requested by Mr. J. D. REID, the Treasurer of the Testimonial Fund, to publish the following, which we do with pleasure.

We would suggest to our critical friends that Mr. HOOVER's antecedents have very little to do with this testimonial. If they choose to contribute, well and good; if not, no one will blame them for withholding their assistance.

TO THE EDITOR OF THE TELEGRAPHER.

The very kind manner of your endorsement of me in connection with the Morse testimonial, induces me to send you the original letter written me by Mr. Hoover, to prove the utter absence of all meretricious designs in originating the movement. I answered it a month afterwards, making such suggestions as occurred to me, and offering to aid Mr. Hoover and friends in any way in my power. No officer of the Western Union Company has at any time been consulted respecting it, except as appears by my note to Mr. Orton and his reply. Mr. Orton is as anxious as I am that every telegrapher connected with every company should enjoy the pleasure of being connected with this work. Mr. Hoover I have met but once, yet in that interview, and his correspondence, I have been led to recognize in him a man of excellence of heart, and utterly free from guile or pretence.

Yours, respectfully,

JAMES D. REID.

ALLEGHENY CITY, PA., February 15th, 1870.

J. D. REID, Esq.

Dear Sir: Your interest in all that pertains to the advancement of the telegraph cause, as well as your outspoken praise of those who strive to elevate our profession in general, points to you as one who will, no doubt, take an interest in the following matter, and we rely upon your sound judgment for much valuable information.

A committee, of which I have the honor to be chairman, propose to submit to each and every operator and telegraph employé of the United States a subscription list, for the purpose of presenting to our venerable friend, Prof. Morse, a suitable token of our respect and esteem for that worthy man. We propose to make the offering as general as possible, so that but a small amount from each one will be required, and, consequently, more easily obtained. I would ask your aid. First, your opinion upon the subject in general, and the probable amount that is necessary to be raised, to make the affair worthy of the recipient. Second, what is the whole number of offices in the U. S., and does our new rate book cover them all? Third, the nature of the gift. We think of a gold medal, with a complete list of the subscribers. We invite your very earliest attention and reply to these questions.

I have never had the pleasure of seeing Prof. Morse, but it thrills me with pleasure to think of the feelings of the good old man when he should be handed this testimonial from three or four thousand persons of his own native land. Indeed, friend Reid, I have the matter greatly at heart, and you will therefore excuse the warmth of a stranger, but I know you will gladly aid us and give us all the encouragement you can.

You will be kind enough to consider the matter confidential as yet, and give us your opinion whether it should be kept so or not.

Trusting to have your opinion and advice at an early date, I am, truly yours,

R. B. HOOVER.

I think this letter should secure to Mr. HOOVER the kindest consideration of his telegraphic brethren, and relieve us both from all suspicion of connivance for any improper designs.

J. D. R.

A Valuable Professional Journal.

AMONG the numerous periodicals published in this country which are devoted to technical specialties, we know of none which is conducted with so much ability, and is in every respect so complete an exponent of the interest it represents, as the *Railway Gazette*, of Chicago. Each number is filled with valuable original contributions from experienced and practical men, relating to every branch of the art of railroading, from driving a spike up to designing a locomotive. Every person connected with a railroad, from the highest to the lowest, cannot fail to learn much that is useful and valuable from its well filled columns. Its general appearance indicates it to be in a highly prosperous condition, and we trust it may continue to meet with the success that it so well merits.

GALVANIZED TELEGRAPH WIRE.

LONG LENGTHS!! FEW JOINTS!!

SUPERIOR QUALITY! LOW PRICES!

The Wire manufactured by Messrs. **RICHARD JOHNSON & NEPHEW**, Manchester, England, has attained its celebrity on this Continent mostly from its long lengths—a joint occurring only on the average once in about 1,200 feet. The advantage of this feature will be apparent to all telegraph constructors. It is accomplished by a process peculiar to Messrs. JOHNSON'S establishment, and they are the only manufacturers in England who can do it.

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GEO. W. SHAWK.

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SHAWK & FOOTE,**Electrical Instrument Manufacturers,**
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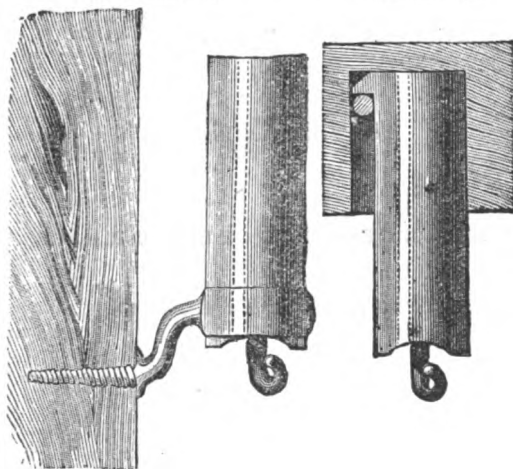
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REPAIRING NEATLY DONE.

BROOKS'**PATENT PARAFFINE INSULATOR.**

FOR SIDE OF POLE.

FOR CROSS-ARM.

**L. G. TILLOTSON & CO.,**
AND
BLISS, TILLOTSON & CO.,**CHICAGO,**

SOLE AGENTS FOR THE UNITED STATES.

The improvements introduced in the construction of this Insulator make it, beyond question, the BEST.

Its insulating properties exceed those of the glass a hundred thousand fold.

In strength and durability it has no equal.

They are warranted not to break or part.

They are made with a screw shank, to fasten into the pole, price 38 cents each, or without the screw, for cross-arms, 30 cents each.

Pamphlets furnished, with full description.

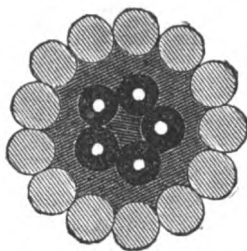
A stock of the Insulators always on hand at our stores.

THE BROOKS INSULATOR, with the PATENT COMPOUND WIRE and our PATENT MAGNETS, constitute the best Telegraph Lines ever constructed.

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Importers of English Galvanized Wire; Manufacturers and Dealers in every description of Telegraph Machinery and Supplies.

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SUBMARINE TELEGRAPH CABLES,

INSULATED WIRES, for

TELEGRAPH AND ELECTRIC USE, and for

BLASTING AND MINING PURPOSES,

in every variety desired.

As an Insulation for Telegraph Cables and Electric Conductors GUTTA-PERCHA has been universally adopted by all scientific and practical Electricians and Manufacturers of Telegraph Cables and Wires in this country and Europe, and has sustained, with increasing confidence in its superiority, the practical test of over twenty years' general use.

The PROPRIETOR would say, to all parties desiring

SUBMARINE TELEGRAPH CABLES,

that he will guarantee to make and deliver at his Factory any style of Cable, Insulated with Gutta-Percha, as low as they can import Cable of the same style and quality.

ORDERS RECEIVED AT THE FACTORY.**Messrs. L. G. TILLOTSON & CO.,****8 DEY STREET, NEW YORK,**

AND

BLISS, TILLOTSON & CO.,**247 SO. WATER ST. CHICAGO, Ill.,**

have been appointed by me GENERAL AGENTS for the sale of any Telegraph Cable or Wire manufactured at the Works in New York, at Factory Prices, delivered in New York.

JOHN THORNLEY, 503 Chestnut St., Philadelphia,

has been appointed Agent for the sale of any and all goods manufactured by me, at Factory Prices, delivered in New York.

SPECIAL AGENTS IN NEW YORK,

for sale of all goods (except Telegraph Articles), are

H. G. NORTON & CO., 26 Park Place,**RUBBER CLOTHING CO., 347 Broadway,****A. D. & C. A. HODGMAN, 201 Broadway.****SAMUEL C. BISHOP.**

OFFICE AT FACTORY.

**NEW
SUBMARINE CABLE.****A. G. DAY'S****KERITE,**

OR

COMPOUND RUBBER COVERED WIRE**SUBTERRANEAN & AERIAL WIRES,**

OF THE

HIGHEST INSULATION.**CHARLES T. & J. N. CHESTER,**
No. 104 Centre Street,

EXCLUSIVE AGENTS

offer for sale, as TELEGRAPH and ELECTRIC CONDUCTORS, Wires protected by the BEST INSULATOR and STRONGEST RESISTANT TO CHEMICAL ACTION and ATMOSPHERIC INFLUENCE.

After the experience of several years in the use of KERITE for purposes of insulation, we have concluded to adopt it as the very best substance for wire covering, not only for use of offices but for SUBTERRANEAN, SUBMARINE and AERIAL LINES. We have used it unprotected for years under ground, and exposed to the most injurious atmospheric influences—to heat, cold and moisture—and have yet to learn its failure, when other ordinary insulating substances would have been rapidly destroyed. UNDER WATER it has retained an electrical charge for many hours, thus ranking it in the HIGHEST GRADE of NON-CONDUCTORS.

We have, therefore, made arrangements not only to secure THE EXCLUSIVE AGENCY for its sale, for the purposes for which we have already sold it so largely, but to furnish complete

IRON-CLAD CABLES,

of the usual size, with KERITE COVER, believing that it will exceed, in insulation for submarine purposes, ANYTHING HITHERTO MANUFACTURED.

We shall be happy to furnish estimates for any amount and size of cable, which will be found to compete with any other construction, both in quality and price.

In corroboration of our statements we append extracts from reports of those who have exposed it to the severest practical tests.

From Prof. SILLIMAN, of Yale College, Nov. 10, 1868.

"I am satisfied, as the result of my own researches, that ozone is by far the most fatal of atmospheric influences. I have submitted portions of KERITE to the action of a highly ozonized air for a sufficient length of time to prove them, and at the same time have exposed the best English Gutta-Percha Covered Cable to the same tests, with the following result: After long experience KERITE resists perfectly! The best English Gutta-Percha Cable was speedily destroyed. A few days' exposure to ozone would produce more effect than many years in a normal atmosphere, exposed to carbonic disulphide, nitric acid, sulphuric acid, sulphuric deoxide, nitric peroxide, chlorine gas and alkaline hydrates. Gutta-Percha is immediately dissolved in carbonic disulphide, and powerfully acted upon by alkaline hydrates. Some samples of KERITE resist the action of the former in a surprising manner, and are completely unaffected by the latter."

"NEW YORK, May 14, 1870.

"In nearly two years since the foregoing was written I have made a considerable number of experiments upon the KERITE Compound of A. G. DAY, all of which tend to confirm former results; while the practical test of the continued use of electrical conductors covered with it, and the growing favor with which they are received by electricians, offers the best guarantee of its permanent value."

*"B. SILLIMAN."**From MOSES G. FARMER, of Boston, Mass.*

"I have tested 195 feet of this wire, and found it a better insulator than Gutta-Percha."

"The instrument used would have shown a current through 300,000 miles of Telegraph wire. The 195 feet showed no leakage in water. The KERITE insulated wire withstands atmospheric agencies wonderfully, and will last for years when exposed to the atmosphere; likewise, when buried in the earth, there is no reason to apprehend decay. It is a well known fact that Gutta-Percha deteriorates very rapidly when exposed to atmospheric influences, and therefore cannot be advantageously used for the covering of wire for out-door exposure unless buried in permanent moisture."

*From Mr. E. A. CALAHAN, Supt. Gold and Stock
Telegraph Co., May 14, 1870.*

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Altogether resulting in a very great reduction in the cost of maintaining and working telegraph lines, while, at the same time, insuring

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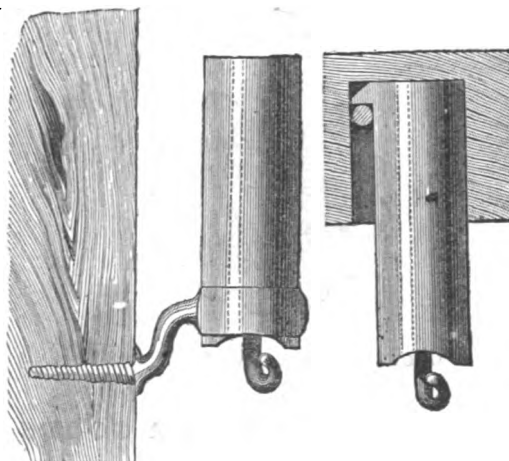
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ELECTRIC AND INTERNATIONAL
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Ogden's Improved Carbons, with the Immersed Platina Connection.

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" Gutta-Percha covered Wire and Cables American Manufacture.

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of various kinds, insulated with

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"THE TELEGRAPHER."

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"THE TELEGRAPHER"

to offer, in the Spring and Fall of each year, inducements to the friends of the paper to use extra efforts to

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 LOUISVILLE,
 ALLEGHENY,
 MONTREAL,
 QUEBEC,

 PORTLAND,
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 HARTFORD,
 TROY,
 NEW HAVEN,
 ROCHESTER,
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which is much RICHER and FINER than brass, he now presents his work in a style and of a quality that are unsurpassed. His relays were awarded the

FIRST PREMIUM

at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionably stronger magnet, while the resistance will be the same.

He is also manufacturing the

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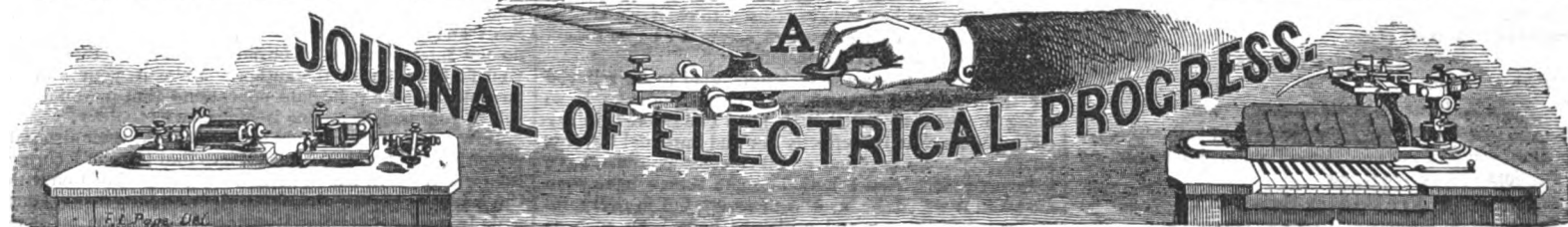
the cheapest, most reliable and simple repeater as yet invented

PRICES.

Button Repeaters.....	\$6 00
Relays, with helices in bone rubber cylinders (very fine).....	19 50
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All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package. He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

THE TELEGRAPHIC JOURNAL OF ELECTRICAL PROGRESS.



Vol. VI.—No. 48.

New York, Saturday, July 23, 1870.

Whole No. 210.

TELEGRAPHIC STATISTICS.

[We condense the following valuable article from a contribution to the *Journal Telegraphique* of Berne, Switzerland, by M. Le Chevalier Clement Viall, Director of the Neapolitan Telegraph lines. It contains suggestions of the utmost value to the future progress of the telegraph, and we trust it may receive the consideration that its importance merits.—ED. TELEGRAPHIC.]

At the present day all questions of public policy fall legitimately within the province of statistics, which being based upon actual numerical data, establish the propositions deduced therefrom with mathematical exactness. In the preparation of the following schedule our object has been to lay down a basis or formula, which should be adapted to furnish all information necessary for the practical solution of the most important telegraphic problems.

The duty of a telegraphic administration, as well as that of all others to whom we confided the transaction of the business of the public, is to obtain the most widely useful result at the least possible expense. The value of the telegraphic service depends upon the manner in which the business is done, and the expense of doing it. Our statistics should therefore be arranged in such a manner as to exhibit the best system of organization and management, and also the most advantageous mechanical and electrical arrangements.

These questions are of great general and practical interest, and all results thus deduced from the comparative study of actual data will be positive and indisputable.

It is true that most telegraphic administrations periodically publish statistics which contain a large portion of the information provided for in our plan, but as these are not arranged upon any uniform system, or with a view to the solution of any definite problems, we have proposed to supply this want by means of the schedule given below.

The schedule consists of two divisions—the technical and the administrative—and these are again subdivided under various heads. The electrical condition of the conducting wires, and the rapidity of communication we consider the two most important practical problems connected with the working of telegraphs. The insulation of the wires, in connection with the length and conductivity of circuits, is one of the most important conditions of the security and promptness of the service.

The particular system of construction employed, and the materials used in the work, as well as the appliances and means for remedying special difficulties, are, of course, dependent upon local conditions. Insulation is the fundamental point which determines the value of a line. In the original construction of a line each locality usually employs the materials most readily obtained and at the smallest expense, and the mode of construction also varies in accordance with the character of the country. A line traversing a thickly settled manufacturing region will be constructed and worked very differently from one crossing the steppes of Siberia or the deserts of Asia. But in construction one common object is aimed at in each case—the insulation of the conductor. Therefore, it is of the highest importance to ascertain with certainty which are the best methods of construction to adopt, and the most suitable materials to employ.

Rapidity of transmission is an indispensable condition of a good telegraphic service. Telegraphic is practically synonymous with instantaneous, and therefore the two ideas should never be separated. If telegraphing is not done with despatch it does not fulfil its mission. It is therefore necessary to carefully investigate this branch of the service.

The technical portion of the schedule treats, therefore, principally of these two questions—the electrical condition of the lines and the speed of transmission. Under the

former head is also comprised the necessary data in regard to insulation, such as the form and material of the insulators, etc. Information concerning the conductivity of the wires, and the rapidity of transmission, is also called for.

To determine the latter point we have adopted a method which practical knowledge of the service has led us to consider the most simple and most effective. By noting the time of transmission upon a despatch, and also the time and place of its reception, the necessary data are furnished to determine the distance passed over and the time of transit. By dividing one by the other the rapidity or the space passed over in a unit of time is obtained. Such a calculation is necessarily limited to despatches within each State, as it is desired by statistics to determine the time of transmission upon the lines of each administration. International despatches going over the lines of different administrations would furnish data which it is of importance not to confound with the other. However, it is better for the present to limit our investigations to despatches sent within each State, or to include at most international despatches sent by direct wires. If our proposal meets with general acceptance it afterwards will be desirable to form general rules to determine the absolute rapidity of all despatches.

The administrative portion of the schedule is subdivided as follows:

1. The formation of the telegraphic network.
2. The staff employed and cost of working the system.
3. Amount of business done.

These have already been published by most administrations with more or less fullness and precision. We have arranged these inquiries with a view of solving the following problems:

1. What is the best system to supply a nation with a complete telegraphic organization?
2. What is the best method of working the same, to obtain the best result at the smallest expense.

That organization will be best, and that administration the most successful, in which the elements of cost of production and amount of production differ the most widely. In comparing these elements we also find the solution of another important problem, viz., the greatest possible reduction in the tariff of charges. This reduction is desired by all, and the subject, therefore, deserves to be studied with care, and to be made the constant object of effort on the part of administrations.

We would finally suggest the idea that it is possible to apply to telegraphic statistics the graphic method so largely in use for other purposes. Statistics delineated in this manner have the advantage of showing at a glance the results obtained. Undoubtedly insulation, rapidity, cost, etc., can be represented by curves whose configuration shows the principal laws governing their variations.

TECHNICAL STATISTICS.

I.—ELECTRICAL CONDITION OF THE CONDUCTORS.

A. Construction of Telegraph Lines.

AERIAL LINES.

a. POSTS.

Wooden posts.—Variety of wood preferred—Size—Mode of preserving, painting, carbonizing—Setting the posts—Distance of posts on straight lines and on curves—Number of wires carried—Price—Duration.

Metallic posts.—Form—Dimensions—Painting—Setting—Distance apart—Wires carried—Price.

Brackets.—Description—Dimensions—Price.

Application of Earth Wires.

b. WIRES.

Iron wires.—Annealed—Unannealed—Of steel—Galvanized, etc.—Diameter—Breaking strain—Joints—Mode of straining—Price.

Copper wires.—Diameter—Breaking strain—Joints—Price.

c. INSULATORS.

Material—Form—Dimensions—Mode of fastening to posts or cross-arms—Position and distance of insulators upon the posts—Price.

d. CROSS-ARMS.

Material—Form—Dimensions—Painting—Fastening to posts—Price.

e. Maximum and minimum of the co-efficient of the normal resistance, and the resistance of the escape, for dry weather, for damp weather, with wind, snow, rain; and for lines situated upon plains, upon mountains, along the coast, in marshes, in tunnels and underground.

II.—RAPIDITY OF CORRESPONDENCE.

a. Number of messages and of words transmitted by each through wire per year.

Average number of messages transmitted per month, per day, per hour.

b. Number of messages and of words transmitted or received by each instrument per year.

Average by each system of apparatus.

Average of work per month, per day, per hour.

c. Number of messages transmitted within the State in one year—Total number of kilometres (or miles) of line—Time employed upon the line by each telegram—Total time employed for the line—Average of the distance passed over by each telegram in a unit of time.

d. Description of the methods of working the apparatus in order to obtain the most rapid transmission.

ADMINISTRATIVE STATISTICS.

I.—OF THE TELEGRAPHIC SYSTEM.

a. PROPERTY.

Lines owned by the Government.
Lines owned by private companies.
Stations belonging to Government, or worked by them.
Stations belonging to private companies, or worked by them.

b. ROUTE.

Political, military, industrial, financial or technical considerations which determine the route.

c. DISTRIBUTION OF STATIONS, WITH REGARD TO ADMINISTRATIVE DIVISIONS.

Stations.—In the large cities—In the chief places of the provinces, departments, counties, districts, etc., cities, chief towns, and villages unprovided with telegraphic stations.

d. NET COST OR EXPENDITURE.

Number of kilometres (or miles) of telegraph line—Total number of telegraph stations—Total expense of original construction of lines, of instruments, etc. Grand total. Net cost per kilometre (or mile).

II.—OPERATING THE LINES.

A. Telegraphic Employes.

a. GENERAL DIVISION OF OFFICERS, EMPLOYÉS AND SERVICES.

Central administration and its subdivisions—Service of inspection and repairs—Service of stations.

b. SALARIES OF EMPLOYÉS.

Fixed salaries—Extra compensations.

c. PROMOTIONS AND REWARDS.

Promotions—By length of service—By merit.

B. Consumption of Supplies.

a. REPAIRS OF LINE.

Yearly consumption of poles, insulators, cross-arms, wires, etc.

b. REPAIRS OF INSTRUMENTS.

Yearly expense of repairs for each instrument of transmission and reception.

c. REPAIRS OF BATTERIES.

Average yearly expense of repairing or replacing each element of batteries.

d. STATION EXPENSES.

Paper, ink, etc.

e. LIMITATION OF CONSUMPTION.

Supervision and management—Fixed allowances—Standard table of consumption—Premiums for economy—Premiums for accuracy, etc.

f. NET COST OF SERVICE.

Total expense of repairs and renewal in relation to the length of line, and number of instruments operated.

c. Transmission of Correspondence.

a. Number of messages sent in proportion to the population served by each office.

b. Average number of messages sent by each station to each 1,000 persons served by each station, and general average in proportion to number of letters sent.

c. Average net cost of each message.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Congress and the Telegraph.

WASHINGTON, D. C., July 16th.

TO THE EDITOR OF THE TELEGRAPHER.

YESTERDAY the session of Congress was brought to a close, and the city already begins to assume a rather deserted aspect. The intense heat, which renders a residence here anything but desirable, caused an impatience to get away which made the members unwilling to delay the adjournment, although requested to do so by the President, in view of complications arising from the European war.

But little of telegraphic interest was done during the last days of the session, other matters of so much greater importance were pressing for attention, and besides the members had become heartily sick and tired of hearing about telegraph projects and telegraph squabbles, so that it was difficult to get anything of the kind before either house.

At a meeting of the House Committee on Commerce, July 14, a resolution was adopted authorizing the Sub-Committee on the International Ocean Telegraph Company to sit during the recess, and take testimony in regard to the tariff and exclusive rights of that company, and to report to the Committee at the commencement of the next session of Congress.

Afterwards the Sub-Committee agreed to meet in the City of New York on the 20th of September next for that purpose.

All the telegraph projects and schemes go over to the next session, which, as it is the short one, and will have a large number of pressing and important matters to attend to, will not be likely to give them very much attention.

Mr. Washburne will endeavor to obtain action on his postal telegraph scheme, but as when it does come up it will lead to a long debate, the whole matter will be very likely to go over to the next Congress. Political combinations and complications will also be likely to exert an unfavorable influence against the adoption of the measure which he has so enthusiastically and persistently advocated and supported. He has made an able report on the subject, which will be widely circulated, for the purpose of manufacturing public opinion in its favor.

In my last letter I referred to the bill to incorporate the Loomis Aerial Telegraph Company. The bill has now been printed. There is one section to which I wish to call attention. There seems to be a large sized cat in this meat tub, which it will be well for interested parties to look after. Section 3 provides as follows:

"That the business and objects of said corporation shall be to develop and utilize the principles and powers of natural electricity, to be used in telegraphing, generating light, heat and motive power, and otherwise make and operate any machinery run by electricity for any purpose—and to use any appliances necessary to conduct electricity in any form in or through any portion of the United States, and Territories of the same, subject to the laws of the various States and United States, through and in which said conductors and appliances may run or be stationed, and said telegraph, or machinery be operated."

If this does not create a national telegraph corporation, to use not merely aerial but any kind of electricity and system of telegraphing, I must confess myself very much mistaken. It is not probable that even if the charter were granted it would ever amount to anything; but still, as Congress has always refused to charter a United States telegraph company, there seems to be no reason why it should do so in this instance.

I now close this series of letters, glad to be relieved for the time from duty as your correspondent. In so doing I desire to say that I have endeavored in my correspondence to be perfectly fair and impartial towards all parties. No personal or other considerations have influenced me. That I may in some things have been mistaken it would be useless to assert, but in every instance my statements and criticisms have been such as appeared at the time to be warranted by the facts.

CAPITOL.

The Present Condition of Operators, and its Remedy.

CHICAGO, June 22d.

TO THE EDITOR OF THE TELEGRAPHER.

THERE is probably no profession which offers so many opportunities to its followers for improvement and advancement, or so much time for self education, and so greatly disregarded as this; it is very seldom, indeed, you find one in the best society, or an object of attention on account of his talents or brilliant accomplishments. (This is written, not for those who, ignorant, cannot gain a position in the very society they affect to sneer at and despise—which refuses them recognition on account of their ignorance alone—but for those honest hearted ones who find themselves so situated, and would gladly remedy it did they know how. Few ridicule society but those who are denied admission through some fault of their own.)

How shall I educate myself? First, study during the evenings and any leisure time you may have in your office. There are hundreds of offices in the country where operators can use for this purpose from two to eight hours per day. Have a teacher, and recite as often during the week in the evenings as you can. Study everything. The more you learn the more will you realize your deficiency. Socrates used to say he had learned but one thing—"that he knew nothing, and most people knew not even that much." There are some tender plants, quite young, growing in pots, near the only window in my office. Each morning they must be turned, until they are strong, because during the day they bend over towards the light, seeking it, and would be crooked unless they were changed. So with ourselves. As we learn our ignorant spots, and our souls keep bending towards the light of education, we must continue turning the dark sides to it, until we are strong enough to be a man among men.

Upon asking some ladies, employed in a Western Union office not a thousand miles from Chicago, why they did nothing to utilize the valuable time wasted, they replied: "We are so tired at night from being confined to the office all day; if we were allowed the hour at noon for exercise outside, as the gentlemen are, our desire for improvement would not be blunted or weighed down with exhaustion." Which is most likely the case. Companies should not make such rules as will secure this result. Nine or ten hours' labor is not too great if an hour of rest is granted midway in the day, but otherwise it is terribly injurious.

But the Superintendent may not be aware of this error. Nothing has ever been said, and he cannot be expected to know and remember all the minor details, however important they may be to others. Let the ladies get up a petition, in a ladylike and dignified tone, present it to the proper authority, and I venture to say it will be received in the same spirit, and justice administered. Superintendents are not the monsters of iniquity and natural enemies of operators that nineteen twentieths believe them to be, and one of the results of an education will be to learn this. It is your own ignorance and egotism that leads you to believe it, my friend.

Talking once with an operator in Indiana, he expressed surprise and ignorance of the working of the ground wire, and it was subsequently developed that he knew nothing whatever of the ground circuit, and supposed the flow on the wire above to be all there was of it. How can persons with so little knowledge of their profession be expected to show much in anything else, and, as a consequence, command respect as a body. A class of men with the advantages at their disposal such as telegraphers hold, have no right to complain of oppression; if there is any it is through their own negligence.

In addition to study, one, to educate, must read considerably; but better read nothing than the miserable trash afloat and for sale everywhere; let it be of a standard character. The Hon. Anson Burlingame once said a young man, in one year's judicious reading, could be-

come acquainted with all the leading facts in history sufficiently to converse or write intelligibly and readably.

Thousands and thousands allow this essential to happiness to go unheeded. Dickens' novels are a means of education, and that of nobody is complete until they are read. The same can be said of Victor Hugo, Sir Walter Scott and George Elliot. Many complain these works do not interest them. Consider, reader, whether it be your fault or that of the author. Make it your aim, if possible, to get a collegiate education—that it would result in your benefit no one is so insane as to deny.

How many, if they would use the time at their disposal properly, might, with the advantages they have in securing from the Western Union news, acting in conjunction with the paper or papers already in their country town, start a daily, and, conducting it successfully, secure an honorable position? How many fail to use this most potent means, always at their disposal?

The results of such a course as this are innumerable. When the advanced state of knowledge, even of things concerning our own profession, is considered, we are surprised that each does not put forth every effort. Any one now telegraphing can, by application and a proper use of the means at their command, become a Superintendent, if that is the height of their ambition. But when we contemplate that the nature of the foundation of our business is unknown, versed in nothing but a few general laws, we see in this fact alone proof of the renown of those who will study and solve the great problem.

The new improvements in everything, even to so small an affair, considered in a sense of avoidupois, as an insulator—the lack of a good one being rightly termed "the crying evil"—the perfect self-adjusting relay, self-closing key, wire, and the hundred of others to be invented, opens certainly avenues sufficient for all to wealth and prosperity.

Operators then will know better than to strike, since all will be so elevated and consequently command such a respect as to leave no room for complaint.

Will not, then, each one look to this matter? Do not complain that it will be too much trouble. What are you here for? Every day you live, without using it to the best advantage, you commit a most positive crime. Remember the fate of the man who buried his talent.

Lives of great men all remind us
We can make our lives sublime,
And, departing, leave behind us
Footprints on the sands of time;
Footprints that perhaps another,
Sailing o'er life's weary main—
A forlorn and shipwrecked brother—
Seeing, shall take heart again.

OMEGA.

Mr. Hoover's Defence of Mr. Reid.—What is Proposed to be Done.

WASHINGTON, July 16.

TO THE EDITOR OF THE TELEGRAPHER.

MR. HOOVER, in his letter of June 13, attempts to defend Mr. J. D. Reid from what he terms misstatements of "Perdu" in a previous letter. In my opinion this is superfluous, and Mr. Reid is well able to defend himself. In fact I have charged that gentleman with nothing that calls for any defence from Mr. Hoover. What I have said about the testimonial is true, and is sustained by the entire force of the competing lines, and by many of the Western Union employees.

Now that Congress has adjourned, and engagements around the capitol will cease for some months to come, I shall discontinue the publication of my letters from here for the time being. I propose to make a stop in Baltimore for a time and take a look into affairs there. I think there is a wolf in the Western Union office there who needs chasing. If things are as has been represented somebody will get "riled" that is rather slow for the success of the coöperators.

I propose also to visit the City of Brotherly Love, and take a glance at things there. I believe there is much to be done in that city through the columns of THE TELEGRAPHER, and shall not be slow to give its readers the benefit of my observations there.

I may also extend my visit to New York, but will leave the ventilation of affairs in that city to yourself and the parties interested.

Whether my letters have accomplished any good is not for me to say, but they have been written with the desire of presenting facts to the consideration of your readers fairly and candidly, and I hope that they have not been entirely without interest or ineffectual.

PERDU.

The Telegraph in Kentucky.

BOONE COUNTY, KY., July 9th.

TO THE EDITOR OF THE TELEGRAPHER.

IN the last number of THE TELEGRAPHER I notice a communication from a Mr. Nugent, suggesting the propriety of placing the telegraphic character, two dots (..)

beneath the letter "I," as a mark of distinction from "J," at the same time noting that it would abolish a great source of trouble to telegraphers, printers and others. While every person of any experience in reading "copy" must be aware of the annoyance arising from the similarity of those two letters, would it not be much better to impress on the minds of teachers the importance of learning their pupils the proper mode of forming them. There is really no more similarity between I and J than F and T. The remedy, I think, would be to carry half the J below the line of writing. Unless this is done the letter is not made. Let every one follow this rule, which no doubt they learned at school, and the trouble in question will vanish.

Telegraph matters in this section are quiet. In Louisville Western Union office, under the able management of T. R. Boyle, manager, and N. DeBree, chief operator, things run smoothly and to the satisfaction of all. There have been some changes. "Captain Jenks" resigned, to accept a position in the Superintendent's office at Lawrence, Kansas; John Torrence has gone to his "old stand" in Pittsburg, while the office has been reinforced by Messrs. C. Smith and Fox, from 145 Broadway, N. Y., who form part of the "owl" force under the efficient superintendence of the genial Hull. (No relation, I believe, to the "Hull" of 1812 memory.)

The feelings engendered by the "strike" have vanished,

"And, like the baseless fabric of a vision,
Left not a wreck behind."

J. E. Reeves is the present able train despatcher and telegraph Superintendent of the L. C. and L. R. R., which, by the way, is the favorite route for travellers from the middle to the great South Western States. More anon.

SHORT LINE.

Sabbath Labor.

PHILADELPHIA, July 11.

TO THE EDITOR OF THE TELEGRAPHER.

THERE is a certain class of men, apparently lacking the attributes of Christianity themselves, who take delight in disparaging and magnifying flaws in the conduct of those who are. Now, I think a man who is striving to lead a life near to Him from whom all blessings flow should be encouraged. These remarks are prompted by several communications to THE TELEGRAPHER of late, in which the Christianity of several members of the fraternity was taken into account. Whilst a hypocrite is the lowest possible type of manhood, so also a Christian is the highest possible type. Because a man's lot is cast in the telegraphic business is he necessarily debarred the privilege of resting his hopes for salvation in the Saviour of Mankind, and in his own feeble way trying to live up to His commandments? A correspondent recently remarked that a man should not work on the Sabbath if conscientiously opposed to it. Exactly so; but suppose public necessity makes it necessary, and his position confers upon him the means to live in a purer moral atmosphere, and to give his family a good education; thereby opening up to them a more extended field of Christian benevolence, will his conscience suffer much? Now, as to another phase of the question, and of which it may be considered that I hold peculiar views. As long as there has to be a moderate amount of Sunday work on telegraph lines the Christian men should be the last to shirk it! If they will not do their share of work on that day it will have to be done by others *perforce*. Would not they be destroying the opportunity to non-Christians of attending church, or engaging in other work which might be the means of bringing them to a realization of their duty to God? What one of us would refuse to work for a man on the Sabbath if by so doing we thought it would benefit him spiritually, and thus be healing a disease. I for one would not ask a man to do anything which I would not do myself. The great trouble with telegraph companies is their liability to institute an excess of labor on the Sabbath. The character of anything commendable in itself is changed at once by excess. SUB ROSA.

ANSWERS TO CORRESPONDENTS.

W. J. B., *Minnesota*.—In putting up lightning rods the important point is to make the rod of sufficient conducting capacity, and to get a thoroughly good ground connection. The best electrical authorities agree that the rod should not be insulated from the building. In point of fact, when glass insulators are used, they are wet by rain so as to become conductors, and are usually shattered whenever an atmospheric discharge takes place through the rod.

CHARLES W., *Pennsylvania*.—Get a sounder with coils one inch long and one inch diameter, wound with No. 23 or 24 wire. This will give you the best result with two cups Daniell Battery, as its resistance is about the same.

G. W. G., *N. Y.*—1. We do not think the project you refer to will ever amount to anything under its present management. It shows few signs of life at this time. 2. The total length of line wire in the new city Fire Alarm system is, we believe, about 600 miles. It is constructed with No. 7 American compound wire.

PERSONALS.

Mr. ED. LERNED, late of the Clinton, Iowa, office of the Western Union Company, has been appointed manager of the Belleville, Ill., office of the same company.

Mr. JOHN BERRYMAN, Jr., formerly of Tidouste O. C. and A. Railway office, has accepted a position with the Western Union Company, which has lately opened an office at Tidouste.

THE TELEGRAPH.

(By Cable.)

THE CABLE TO JAMAICA.

HAVANA, July 14th.—Sir Charles Bright, Chief Engineer of the Panama and West India Cable Company, accompanied by Mr. Gall, of Jamaica, leaves for Batabano to-morrow, from which point he will commence the laying of the cable to Jamaica.

TELEGRAPHIC COMMUNICATION DESTROYED.

PARIS, July 17th.—2 P. M.—Last night, by order of the Prussian authorities, railway and telegraphic communication between France and Prussia was destroyed.

VIENNA, July 20.—Turkey has called out her reserves and stopped the telegraph in all directions.

THE EUROPEAN WAR AND SUBMARINE TELEGRAPHY.— TELEGRAPHIC COMMUNICATION.

LONDON, July 18th, 1870.—The French Government is now enforcing a prohibition against "code" and "cypher" words in telegrams.

The Atlantic companies, looking to the interests of all classes of their customers in the United States, have arranged to send their foreign business via lines outside of France, which they are quite capable of doing, having direct cables on the one hand to Holland and Prussia, and on the other hand the Falmouth, Lisbon, Gibraltar and Malta cable, by which they are able to reach direct lines to Italy and the interior States, as well as those reaching further east.

Official Statement, Western Union Telegraph Co.

	May, 1869.	May, 1870.
Receipts.....	\$590,145 21	\$596,290 28
Expenses.....	387,861 54	407,423 44
Net Profits.....	\$202,283 67	\$188,866 84

FOREIGN TELEGRAPHIC NOTES.

A TELEGRAPH cable is soon to be laid between Shanghai and Hong Kong, China.

A telegraph line between Koba and Osaka, Japan, is in process of construction.

Empire Telegraph Line.

THE Empire Line Transportation Company, under direction of Superintendent Chadwick, have constructed a telegraph line, connecting their office in this city with the suburb of Kane Station, with a northern branch to Chesnut Ridge. The headquarters office is in charge of chief operator Frank Du Tiel, with R. Chadwick as manager and General Superintendent. It is stated that all the operators have been unusually given to "speaking" lately, doubtless in consequence of their new electrical relations. We wish the new line abundant success. It will be open for business early next week.—*La Fayette (Indiana) Daily Journal*.

The Telegraph as a Detective.

ON Sunday last, while sitting in the telegraph office at Johnsonville, we experienced a practical illustration of the advantages of the telegraph in the capture of rogues and thieves. Johnsonville office was called by the operator at McKenzie. We gave the answering signal, and the operator proceeded to give us a description of two young men, named Murray and Nelson, hailing respectively from New Orleans and New York, who had left McKenzie the previous night, borrowing without leave a small sum of money, a pistol, some shirts, and various other articles from the residence of Mr. Monroe McKenzie. While listening to the instrument clicking off the description of the thieves, we glanced out of the window and saw the identical chaps walking up the steps of the Johnsonville Hotel. Another glance revealed to us the person of M. M. Box, the worthy Sheriff of Humphries. We instantly communicated the facts to McKenzie, then stepped to the door, beckoned to the Sheriff and informed him of the circumstance, which resulted in their immediate arrest and the finding of the property, and, upon the arrival of the evening train, its identification by Mr. George McKen-

zie, who came over for that purpose, and returned the same night with the prisoners to McKenzie. Upon their examination, on Monday, Murray turned State's evidence, and Nelson was brought to Huntingdon and committed to the tender care of Tom Briant, our jailer.—*Huntingdon Tenn.) Courier*.

Awkward Result of Telegraphic Flirtation.

A LITTLE incident which happened to a Lebanon young lady, during a recent visit to Nashville, has been the cause of much amusement to a few friends who have heard the details. Among the numerous admirers of the young lady in question is a gallant young gentleman, who is engaged as an operator in one of the telegraph offices in this city. Being desirous that Miss — should see all the curiosities of Nashville, the young man proposed that they should visit the telegraph office. A party of young ladies and gentlemen was made up, and all repaired to the office under the guidance of the gallant operator aforesaid. After explaining the telegraphic apparatus, and explaining the works of the battery, he proposed, for the amusement of the party, to take off the next despatch which came over the wires. An opportunity was soon afforded, and the operator took off the telegram sent by a lady in Kentucky to a lady in Texas, which, complete, consisted simply of the words, "Isaiah ix, 6." So unique a telegraphic message created considerable surprise, but not one of the party was sufficiently well posted Sunday school scholar to repeat the verse referred to. Determined to know what the words of "Isaiah ix, 6," were, our young telegraph friend and the Lebanon young lady stopped at Billy Collier's on their way back, and asked to see a Bible. With eager hands they turned the leaves together; but when they found the place, and glanced at the first paragraph of the verse, they laid the book quietly down, and with very red faces quietly left the store. If you want to make a young lady angry in earnest, ask her what is the news by telegraph.—*Nashville Banner*.

New Patents.

For the week ending July 19, and each bearing that date.

No. 105,447.—ELECTRO-MAGNETIC ALARM. Thomas S. Hall, Stamford, assignor to Hall's Electric Railway Switch and Draw Bridge Signal Company, New Haven, Conn.

Claim.—The combination of the system of springs G G, transverse bar I, armature E, electro-magnet A A, with conducting wires, all constructed and arranged as described.

No. 105,493.—ELECTRO-MAGNETIC GATE AND SIGNAL APPARATUS FOR RAILROADS. William Robinson, Brooklyn, N. Y.

Claim.—1. The magnet J forming a part of the circuit, so arranged, with reference to an armature and circuit closer, as to continue the action of said circuit closer, substantially as herein described.

2. The combination of the circuit closer G with the circuit breaker H and gate or signal, substantially as described, and whereby, on the opening of the circuit by the circuit breaker, the circuit closer is released, and made to keep open the circuit till it is again closed automatically by the circuit closer, essentially as herein set forth.

3. The lever f of the circuit closer, so hung or arranged as to be thrown out of working position by a vehicle or train passing in the one direction, and afterward returning to its normal position for control of the armature and circuit closer, by a vehicle or train moving in the opposite direction, substantially as herein set forth.

4. The combination of the levers e f, the spring a, the rod m and the lever m, with the armature K of the circuit closer.

5. The arrangement, relatively to the gate or signal B and its pivot a, of the weight C and projection or lever b, substantially as and for the purpose herein set forth.

6. The arrangement, relatively to the gate or signal B and its axes a, of the projection or lever c, with its link, chain, or cord d, and lever D, in connection with the armature E, substantially as and for the purpose or purposes herein described.

Recent British Patents.

Provisional Protection for Six Months.

No. 1,385.—PETER JENSEN, Chancery Lane, London.

"The writing ball, being improvements in means for writing and telegraphic purposes." A communication from Malling Hansen, Copenhagen, Denmark, 14th May, 1870.

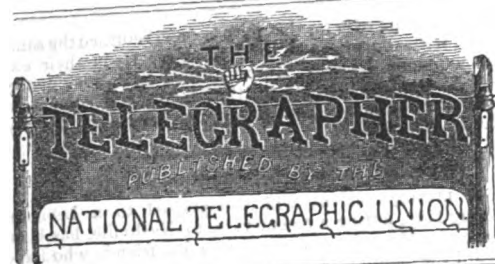
No. 1657.—WILLIAM ROBERT LAKE, Southampton buildings, London. "Improvements in Printing Telegraph Apparatus." A communication from Elisha Whittlesey Andrews, Englewood, New Jersey, and George Baker Field, New York, U. S.

No. 1668.—ZENOBIE THEOPHILE GRAMME and EARLEY LOUIS CHARLES D'IVERNOIS, Paris. "Improvements in Magneto-Electric Machines."

Specifications.

No. 3489.—F. C. WEBB, Regent's Park. Submarine Cables. Dated December 2, 1869.

The copper conducting wire or wires are covered in the usual way with an insulating coating of gutta serena or india rubber, and over this coating wet yarn is sewed as a protection. Around the insulated wire thus prepared a continuous metal sheath is placed, by preference in the form of a lapped tube, composed of soft steel, and this sheath or tube is closed by a service of tarred yarn. Around the core thus formed protecting wires are laid, according to any of the approved processes, and the cable is then complete. The metal sheath or tube is composed of thin metal, rolled to considerable lengths, and these lengths are connected together by riveting, welding or otherwise, so as to form a continuous strip or ribbon, corresponding (say) in length to the wire or wires to be enclosed therein, in order that the process of manufacture may not be unnecessarily arrested by the exhaustion of the supply. Patent completed.



SATURDAY, JULY 23, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D.C.
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THE VALUE OF STATISTICS.

THE study of statistics is not to the ordinary mind a very interesting or fascinating occupation; yet, upon the accumulation of reliable statistics, and their careful consideration and generalization only, can the best and most economical method of carrying on any business be ascertained. In no line of business is the accumulation and study of statistics of more importance than in telegraphy. The construction and working of telegraph lines are matters of detail, about which it is important that we should diligently seek to acquire all the information possible.

After twenty-five years of experience everything connected with the telegraph should be as mathematically demonstrable as a problem of Euclid. The managers of telegraph lines should have carefully noted for future instruction every detail of experience, and record them in such a manner as to be available at all times. Had this been done we should have fewer imperfectly and badly constructed lines, and inadequate and wasteful methods of conducting the business. Large amounts which have been expended in repeating, time after time, costly follies, would have been saved, and the interests of the public and of the companies would have been better served by this great modern civilizing agency.

In the old world more attention has been paid to this subject than here, and a mass of important information has been collected, which is available for the instruction of scientific and practical telegraph engineers.

To illustrate this we would refer to the fact that the different telegraphic administrations in Europe have published accurate and beautiful maps of their entire telegraphic systems. Every station and every circuit is laid down in the most circumstantial manner, and even the connections and arrangement of the wires in the repeating stations is given. Nothing of the kind has ever been carried out in this country, and no such thing as a correct and circumstantial map of the telegraphic system of the United States is in existence. The American Company had a complete set of maps of their own lines, compiled and drawn for their own use under the direction of the engineer, GEN. LEFFERTS, and we believe that it was ultimately intended to publish a general map, similar to but even better than the European maps, but after the consolidation of the American lines with the Western Union the work was immediately discontinued.

In many things our Trans-Atlantic friends are far ahead of us in the science and practice of the telegraph. There, telegraphy has become almost one of the exact sciences, and the profession of a telegraphic engineer is a recognized, honorable and profitable one.

It is disgraceful to the managers of telegraphs in this country that so little attention has been paid to this all important matter. After all these years, and the im-

mense and rapid extension of our telegraph system, we have scarcely anything to prove an advance, either in the construction, insulation or practical working of our telegraphs. A telegraph engineer has little either of honor or profit here. In fact, a proposition to an American Telegraph Company to employ a competent, educated engineer, to direct and supervise the construction and working of its system, would be scouted as a valueless and useless expenditure; yet they will go on wasting the money of stockholders in the construction of lines which need repairs before they are completed, and with glass insulation, because it is *cheap*; and all because no trouble has been taken to obtain statistics of former experiments in the same direction.

We have furnished to the world the best telegraph instruments, wire and insulators, and for ourselves build lines which would not pass muster, and which, it is safe to say, could not be worked in any other country. English telegraph engineers are surprised when they test our lines, even the best of them, that we can do any business at all; and, as Mr. VARLEY says, in his report to the Western Union Company, it is only our climate that enables that company to earn any dividends at all.

We publish on our first page this week an important article, translated and condensed from the *Journal Telegraphique*, of Berne, Switzerland, on this subject, to which we invite the attention of American telegraphers, especially of telegraph managers. If they would unite in obtaining and tabulating such information as is here called for, they would render an important service to the telegraph interests not only of this country but of the world. At present we have no contributions to make to the general stock of knowledge. When we receive such documents from abroad we have nothing to offer in return. We ourselves have several times received applications from telegraphic associations, and men of science in Europe, to forward such statements in regard to American telegraphs, and have been obliged to respond that there were none to send.

To show the ignorance which exists in regard to telegraph construction, we might instance a line now being built, of which the superintendent of construction was recently in this city, and stated with evident satisfaction that he was building a first class line, with "forty posts to the mile and with glass insulators." If such a line as that works at all it certainly will be mainly due to the climate and not to the insulation.

We hope that a reform in this respect may soon be established, and that as the tendency now seems to be towards a reduction of charges for telegraphic service, as a first step towards securing it there may be a careful consideration of telegraph statistics, and a reform accomplished in the building, equipping and working of telegraph lines.

Gamewell's Fire Alarm Telegraph.

THE system of fire alarm telegraphs is rapidly being adopted in all places above the grade of a village. The only system that has proved successful and satisfactory is that of GAMEWELL & Co., of this city, which is covered by over twenty patents. Within the last few days they have closed contracts with the municipal authorities of Jersey City and Elizabeth, N. J., and Providence, R. I. Their work is always done conscientiously, and warranted to prove reliable and durable.

The War in Europe and the Telegraph.

THE war which has broken out between France and Prussia is likely to interfere to some extent with the working of the European telegraph system. If confined to the two powers its effect upon telegraphic communication generally will not be very extensive. If, however, as is not improbable, other European nations, and especially England, should become involved in it, it would result in the entire interruption, for the time being, of inter-continental and submarine telegraphing. In that event attempts may be made to destroy the

cables which connect those countries with each other and with the American continent. In view of these complications it is to be regretted that the proposition of President GRANT, for guaranteeing ocean telegraph cables against the effects of war, has not as yet been adopted. For the present, the only effect of the war has been to interrupt communication between France and Prussia, and a stringent enforcement of the prohibition of the use of "code" and "cypher" words on the French lines. All foreign business will be sent on lines which do not touch on French soil. There are direct cables from England to Holland and Prussia, and Eastern countries can be reached by the Falmouth, Lisbon, Gibraltar and Malta cables.

Reprehensible Conduct.

WE have occasionally had occasion to mention with deserved commendation the printers of THE TELEGRAPHER, RUSSELL BROTHERS. We regret to be called upon now to express our disapproval of their conduct. That they are good printers, and deserve the large patronage which they receive, is true, but they are the first to run their establishment with Chinese labor. Formerly a colored youth performed this duty, but now passing along Centre street a glance at the prominent building on the corner of Reade street will show in his place a Celestial busily turning the crank. What may be the motive for the change we cannot say. The colored youth never struck, and never neglected his duties, and certainly a tin hat, and a new suit of clothes once a year, were not exorbitant wages. This first initiation of Chinamen into the printing business is creating quite a sensation, and has been extensively commented on by the city and other papers.

The Panama and West India Cables.

THE Havana correspondent of the New York Herald, under date of July 13th, writes:

Sir Charles Bright, having in charge the laying of the West India and Panama cable line, arrived in Havana yesterday, and is making arrangements for the landing of the cable at Batabano, where it will be buoyed. He will then return to Cienfuegos. Twenty-five miles of heavy cable is now being coiled on board of two vessels of light draught, from the steamer Suffolk. This is to be laid in the water at the head of the Gulf of Cazones, which is too shallow for larger vessels. Those containing it will be towed over the ground by two Spanish gunboats, which have been designated for that purpose. The ends will be buoyed. This accomplished the Suffolk will proceed to Batabano and lay the cable to the western end, thus buoyed. The Dacia will commence at the eastern buoy and lay to Santiago de Cuba, after which the line will be laid to Jamaica. The steamers will then fill up with cable from the Melicote (sailing vessel) and start for Aspinwall, laying it on their return to Jamaica. They will then take that on board the steamer Bonaventura and lay to Porto Rico and St. Thomas. At the latter place the steamer Titian is ready with cable, and, together with the Ben Ladi, at Barbadoes, has sufficient to complete the line through the Windward Islands to Demorara.

The station at Cienfuegos will not be established for the present, until it shall be shown that the business will justify it. The Governor of Santiago de Cuba demanded that the office of the company should be located in the government palace. This Sir Charles positively refused, and as no provision for this is included in the concession, he threatened, in case the point was insisted on, not to land at that place. The operators will be for the most part English, and will receive by sound from bells, the new invention of Sir Charles.

On the arrival of the steamers at Cienfuegos a grand demonstration in honor of Sir Charles and the expedition took place. Never before had such heavy draught vessels entered the harbor, and they were for hours surrounded with small boats, filled with natives from the shore.

TELEGRAPHIC BREVITIES.

ALL telegraphic communication from Montreal, Ca., was temporarily suspended on Thursday evening, July 14th, a tremendous storm having prostrated the wires as far west as Lachine.

Hon. John W. Stewart, the recently nominated Republican candidate for Governor of Vermont, was formerly a telegraph operator at Middlebury, Vt.

GALVANIZED TELEGRAPH WIRE.

LONG LENGTHS!! FEW JOINTS!!

SUPERIOR QUALITY! LOW PRICES!

The Wire manufactured by Messrs. **RICHARD JOHNSON & NEPHEW**, Manchester, England, has attained its celebrity on this Continent mostly from its long lengths—a joint occurring only on the average once in about 1,200 feet. The advantage of this feature will be apparent to all telegraph constructors. It is accomplished by a process peculiar to Messrs. JOHNSON'S establishment, and they are the only manufacturers in England who can do it.

L. G. TILLOTSON & CO.,

Sole Agents for the U. S.

Also, Sole Agents for the American Compound Telegraph Wire Co.

No. 8 DEY STREET, NEW YORK.

GEO. W. SHAWK.

WM. W. FOOTE.

SHAWK & FOOTE,**Electrical Instrument Manufacturers,**

AND DEALERS IN

TELEGRAPH SUPPLIES.

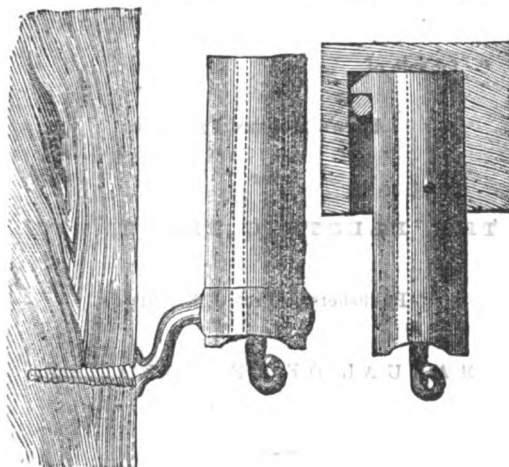
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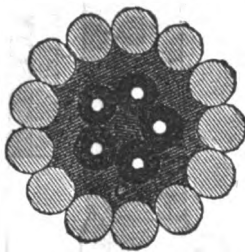
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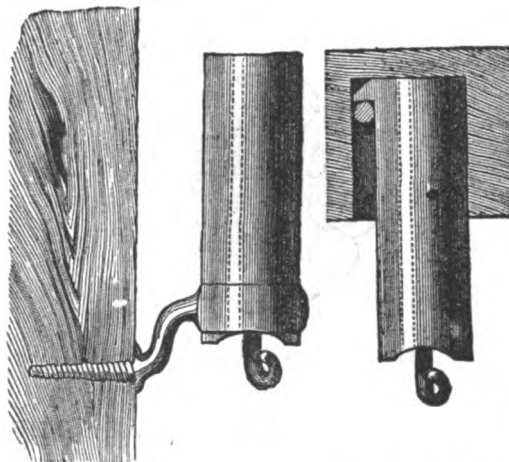
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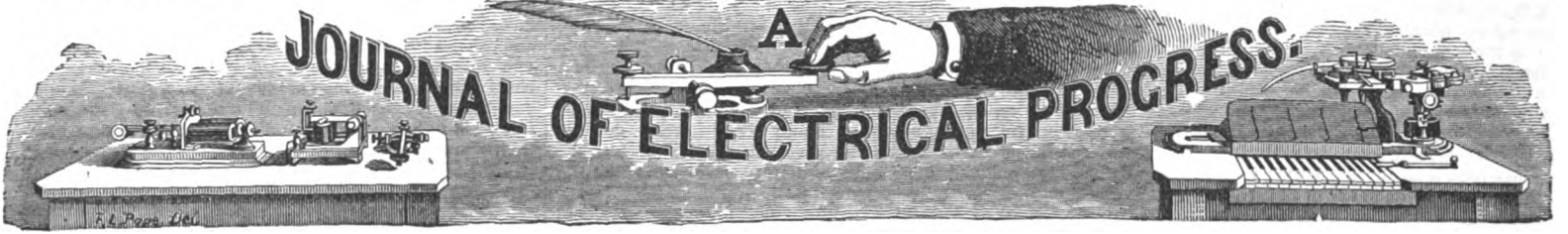
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THE TELEGRAPHER.



Vol. VI.—No. 49.

New York, Saturday, July 30, 1870.

Whole No. 211.

REVIEW OF REPORT OF THE SELECT COMMITTEE OF U. S. HOUSE REPRESENTATIVES ON THE POSTAL TELEGRAPH.

THE report made to the House of Representatives of the United States Congress by Mr. C. C. Washburne, its chairman, and the report of Mr. Palmer from the same Committee, with the accompanying documents submitted at the same time, all of which were ordered to be printed and recommitted, make a document of about 180 pages. This document it is proposed to review at such length as the limits of THE TELEGRAPHER will permit.

In the first place it should be stated that, as a matter of fact, the Committee, as such, has made no report. Both Mr. Washburne and Mr. Palmer were authorized to submit reports, and it is understood that neither of them were fully concurred in by any other member of the Committee. The Committee spent several months in investigating the telegraph system of the United States and of Europe. The substance of the information obtained and the conclusions of two members are embodied in this document.

It is Mr. Washburne's report which it is proposed especially to review—that of Mr. Palmer being in favor of the scheme of Mr. Gardiner G. Hubbard, which stands not the slightest chance of being favorably acted upon by Congress. If any change in the present telegraph system of the country is made it will be to transfer it entirely to Government control.

Mr. Washburne's report is of course an elaborate argument in favor of the Postal Telegraph. The whole course of the investigation of the telegraph by the Committee under his guidance was to develop and confirm the proposed Postal Telegraph system. His object in procuring the appointment of the Committee was avowed, and the Committee was constituted exclusively of those who were known or supposed to be in favor of some kind of a Government telegraph. It is therefore reasonable to presume that all that can be adduced in its favor has been embodied in this report. It is also intended to neutralize and offset the able report of the Committee on Post-offices and Post-roads made by the chairman of that Committee, Mr. Farnsworth, to the preceding Congress. That Committee also made a thorough investigation of the subject, but as it was a *regular* Standing Committee, and not a *Select* Committee of the House, its conclusions were diametrically opposite to those of the latter.

Mr. Washburne, in the commencement of his report, thus sums up the premises of the argument in favor of the proposed transfer of the system to the Government:

"That while to the genius of an American citizen the world is indebted for the practical introduction and application of the electric telegraph, and while the American people were the first to adopt that method of conveying intelligence, and the first line ever constructed upon the earth was constructed with money appropriated by Congress, and while the inventor, Professor Morse, at the earliest inception of his discovery, maintained that the Government should own and control the telegraph, the people of the United States are the last to receive the full benefits of that wonderful invention.

"While in this country telegraphing is very expensive, and by many deemed uncertain and unreliable; while there is no guarantee as to the order of transmission of despatches, and little or no attempt made to guarantee their secrecy, and while little improvement has been made in the telegraph service in this country for the past twenty years, except in its wider development, the system in all other countries has been constantly progressive, until, finally, we see that every European country has adopted the telegraph as a part of its postal system, and has reduced the cost of transmitting despatches to within the reach of the humblest of its citizens or subjects."

This reads well, and to those who know little or nothing in regard to the telegraph, may seem conclusive as to the duty of the Government at once to assume the control of the system in this country, but unfortunately the premises are faulty and the facts do not warrant the end proposed. The first line ever constructed upon the earth was not built by a Congressional appropriation, and although Prof. Morse did urge that Congress should own and control the telegraph, it was from the fact that, being

a novel and untried experiment, it was apprehended, as was found to be the fact, that great difficulty would be experienced in obtaining from capitalists the considerable amount that would be required to introduce and establish it. No man more than Prof. Morse has reason to rejoice that his application for the adoption of the telegraph as a Government institution was rejected, and that it was remitted to private capital as a legitimate enterprise. It has been demonstrated that in this country, on the whole, considering the extent of territory covered and the peculiar difficulties to be overcome, telegraphing is not more expensive than in other parts of the world, and within the last two years the cost of telegraphing to the customers of telegraph lines here has been very materially reduced. Again, it is not true that there has been little improvement in telegraph service during the last twenty years, except in its wider development. Although it must be acknowledged that the improvement has not been as great as it ought, yet there can be no reasonable question but that the telegraph system of the country to-day is far in advance of what it was even ten years since. There is a great improvement as regards reliability and certainty. As a general thing there is no unreasonable delay in the transmission of messages, and any errors which may occur, for which the companies are now peculiarly responsible, would certainly not be lessened under an irresponsible Government administration. It is not true, either, that every European country has adopted the telegraph as part of its postal system. On the contrary, Great Britain is the only country where the telegraph is a part of the postal system. In other countries, although the telegraph is controlled by the Governments, it is no more a part of the postal system than any other branch of Government administration.

Having thus settled his premises satisfactorily (to himself), Mr. Washburne proceeds to quote statistics from the Government (not postal) telegraph systems of Switzerland, Belgium, France, Prussia, Sweden and Norway, and the recently established postal telegraph of Great Britain and its antipodal colonies, Australia and New Zealand, to prove that the citizens of those States are better supplied with telegraph facilities and at a much less rate of charges than are the citizens of this country. He also endeavors to show that in some of these countries the telegraph system is profitable, or at least self-supporting at very cheap rates.

It is a trite saying "that figures can't lie," but it may truly be said that nothing can be made to lie like figures, as is fully demonstrated in this postal telegraph contest. From the same statistics the advocates and opponents of the postal telegraph figure out satisfactory though totally opposite results.

There is one point which Mr. Washburne totally ignores throughout the whole of his long argument, and that is the different conditions under which the telegraph is worked in this and in European countries. There the distances traversed are comparatively small and the country densely populated. Here, distances covered by the lines are very great, and much of our territory sparsely populated by a class of people who have but little occasion to use the telegraph. Take, for instance, the lines to California and the Pacific coast, which for hundreds of miles practically run through a desert, and must be maintained at a large expense for the accommodation of the through business.

In the case of Switzerland, which is acknowledged to have the most complete system of telegraph in the world—and internal messages are transmitted to any part of the Confederation at half a franc for twenty words—the report shows a net profit to the Government, after paying all expenses, of 130,246 francs, for the year 1869.

The official report of the Swiss telegraph administration for that year states that the expenditures were \$214,240.83; receipts for telegraphing, \$197,132.32—a deficit of \$17,108.51. The apparent profit of 130,246.52

francs was made up of forced contributions from communes for establishment of offices, and by deducting from the expenses 148,100 francs, disbursed for new constructions. This official report also shows that of the \$100,000 placed to the credit of the telegraph administration in 1867 all but \$11,144 had been expended.

It is not stated in the report, although the fact is shown in the appended documents, that even so favorable a result is not derived from half franc messages, but from international and transit messages, on which a much higher tariff is imposed, although the expense of handling them is less than of the local business.

The statistics of Belgium, Prussia, and other Continental States, are also made to show a profit, but the fact is not mentioned by Mr. Washburne that these profits are entirely or largely derived, not from the internal messages at the low rates, but from transit and international messages, which are charged double, treble, and in some instances even higher rates. In fact, it seems to be the policy of European Governments to cheapen telegraphic service to their own citizens by imposing the cost upon their neighbors. Excellent and praiseworthy as this system may be, unfortunately we are so situated as to render it unavailing in lessening our own telegraphic burdens. Our telegraphic expenses must be paid by our own citizens, either directly as tolls by those who use the telegraph, or indirectly as taxes by the whole people.

The postal telegraph in Great Britain is also cited, but it has not yet been in operation long enough to furnish any reliable data. It is true, Mr. Frank Ives Scudamore, Secretary of the British Post-office, claims that they have already achieved a solid success, but private advices do not confirm this statement.

Much stress is laid by Mr. Washburne upon the increase of business on the British lines, from 128,872 messages, for the week ending February 12, to 169,562 for the week ending April 9. The experience of the Western Union and other American Companies for these dates will doubtless equal this. In January and February in both countries the business is always much less than after the spring business season fairly commences. The receipts of the Western Union Company alone were over \$57,000 more in April than in February, and for May were \$75,000 in excess of those for February. The number of messages is not given, but they will probably compare favorably with the British telegraph system. The British statistics represents the entire telegraph business of England, Ireland and Scotland, while our figures are those of our company only.

It will be seen, therefore, that notwithstanding the rejoicings of Messrs. Scudamore and Washburne over this increase, it is due not so much to the cheap rate as to the season of the year.

(To be Continued.)

Electro-Magnetic Engines Again.

THE French journal, *Le Nouveau Monde*, published in New York, contains an account of the operation of a new electro-magnetic motor, invented by Mr. E. Prevost, which we would not notice if our criticism did not carry with it an instructive lesson. The account says:

"It has been believed, hitherto, that the power produced depended on the number of elements used in the electric battery. This Mr. Prevost denies. In the same way as one single spark is sufficient to ignite as well a ton as a grain of gunpowder, so Mr. Prevost proves by facts that with two elements of Bunsen, eight inches high by six inches in diameter, electro-magnets may be charged developing a power of 8,000 pounds, whatever be the difference of the force, size, or number of the electro-magnets submitted to the influence of the battery. We have seen with our own eyes that the number of the electro-magnets was increased without the least loss of force in any of them, and that the operator then removed seven-

ral of them without the least increase in the attractive force of those remaining."

Then the account goes on with the stereotyped and erroneous statement that the expense is very small. The inventor is, of course, "ready to satisfy the incredulous public, by experiments on a large scale, that the invention possesses great practical advantages," etc.

This is the same old story renewed. These experiments on a large scale have been made over and over again, and it is well known, by those familiar with the subject, that the "incredulous public" has been thoroughly satisfied, by that very means, that such inventions possess no practical advantages whatsoever.

The assertion made by the editor, on the authority of Mr. Prevost, that the number of electro-magnets may be increased without loss for each individual one, proves only ignorance of the laws of electric currents. Ohm discovered the law of relation between the batteries and the wires discharging the currents, developed by the oxidation of the zinc and decomposition of the fluids in the battery. This law is called the law of Ohm; and, in order not to trouble our readers with the formulae, we will only remark that its chief result is that the battery works to its utmost capacity and utmost result when the resistance which the discharging wire offers to the current is equal to the resistance which the battery itself offers to the passage of the same current.

Metals are much better conductors than fluids, surpassing them several million times; copper conducts the current 20,000,000 better than the best solutions in the battery, to which the resistance of the porous cups has to be added; consequently a Bunsen battery of two cups is able to discharge its current through many miles of copper wire, without experiencing a resistance greater than the current has to overcome in the battery itself; how many miles, may be easily calculated from the dimensions of the battery, thickness of wire, etc.

As long as the length of the wire is below this the whole power of the battery is discharged, and no change in the currents of the wire and its effects on electro-magnets can be perceived, though we increase the length of the wire and charge, say 4, 8, or even 20 or 50 electro-magnets; but as soon as we increase the number of magnets so that the length of the wire surrounding them surpasses the limit at which the resistance it offers to the current is equal to the resistance offered by the battery, the whole power of the battery can no longer be discharged, and the power of the individual magnets will commence to decrease. These laws are of the utmost importance to the telegrapher, who has to overcome great resistances, produced by passing electric currents through long distances and over very long wires. In fact, these laws were discovered in the use of the electric telegraph; and every telegraphic electrician can tell this inventor that he is greatly mistaken in his denial of the demonstrated fact that the "power produced depends on the number of elements used in the electric battery."

His comparison of a "spark igniting a ton as well as a grain of gunpowder" is quite out of place. Most inventors of electro-magnetic machines are at the present day in a much denser fog than ever were those who attempted to improve the steam engine. They are, in regard to electric currents, on the same level as those are in regard to a steam pressure who ignore the law of Mariotte, the atmospheric pressure, and the theory of the crank or eccentric.

We recommend to all those who venture on this field a thorough study of the law of Ohm in its special applications to electro-magnetism. The most valuable work for them to study is Dub's *Electro-Magnetism* (Berlin, 1861), it will cure them of their delusions.—*Manufacturer and Builder.*

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Telegraph Matters in the Monumental City.

BALTIMORE, MD., July 25th.

TO THE EDITOR OF THE TELEGRAPHER.

SINCE my arrival in the monumental city I have been endeavoring to ascertain the condition of affairs here, but am unable to get to the bottom of some very important facts, for fear of being detected in my object. However, I have learned a few things which may be of interest to the readers of your columns.

Business, as a general thing, is dull. Some activity has been experienced in telegraphing during the past week, occasioned by the foreign war.

In the Western Union office things are very little changed. The "wolf" still howls and snorts at a few in

a terrific manner. He likes his "grub," and envies others who like theirs. He takes particular delight in throwing obstacles in the way of one or two of the weaker. As a teacher of telegraphing he is a success when well paid. The position now occupied by the "wolf" was given him for his faithfulness during the strike, he declining to go out with the operators on that occasion. He tried to work in Washington but it got too warm, and he made tracks for home after a few hours' stay. After the resignation of Mr. Dameron as chief operator there was a long contest between Mr. Guthridge and the "wolf" for the appointment, and finally Mr. Guthridge got the appointment, which he filled very acceptably both to the company and those under him until the strike, when the faithful "wolf" superseded him.

A. Wilson, Jr., is generally liked by the operators, and they say he is a strict company's man and a good manager. Mr. W. at one time taught a class of telegraph students, but I am informed he did not meet with the desired success and gave it up as a bad job; but I am inclined to think he does something in that line yet.

The clerical and other departments of the Western Union office are about the same as other large offices of this company—all conducted under a regular red tape system.

Very little can be said about the Franklin and A. & P. offices. They do not seem to have that prominence among the business portion of the city they should. I am informed that the cause of this might be remedied if the managers exhibited a little more activity. Their management seems to be something like that of the B. & B. office, which appears to be as stupid as an owl in daylight. I am informed the B. & B. office here has been badly beaten on several occasions by the Western Union, and, from what I have been able to learn, more activity in the management of that office would prove beneficial to the cooperatives. Nearly everything depends upon Mr. Stewart, and I am inclined to think if Mr. S. had full sway he would make it lively for the other companies. Nothing can be learned definitely here concerning the condition of the cooperatives. They seem to be as ignorant about the state of affairs, pecuniarily and otherwise, here as elsewhere, and about as much dissatisfied on account of the non appearance of the promised statement.

With one or two exceptions, the strikers have all returned to work, and nothing is now said about it.

I may visit here again soon, and, if things are not improved, a more particular account may be given. I hope that a word in time may prove serviceable. I shall visit Philadelphia, but my stay will be very brief, and I shall not have time to give as full details there as I would like. However, I shall endeavor to learn enough to give to the readers of THE TELEGRAPHER some of the leading items of interest, as they appear to a stranger in the city of brotherly love.

PERDU.

The New Cincinnati Western Union Office.

CINCINNATI, O., July 22d.

TO THE EDITOR OF THE TELEGRAPHER.

THIS city not having been represented in your columns lately, and fearing that the numerous correspondents who so suddenly sprung up have since determined to maintain silence, I will attempt to give to the fraternity some description of the new office of the Western Union Company at this point. A short time since the company secured a lease of the basement and fourth stories of the building Nos. 56, 58 and 60 West Third street, in front of which now stands the "Boss" pole of this western country, it being not less than sixty feet high.

The basement of Nos. 56 and 58 is used as the Delivery Department, and that of No. 60 for the Commercial News Department. The ground floor of Nos. 56 and 58 is occupied by the Receiving Department, in the rear of which is the Manager's office. In the third story is located the office of the District Superintendent and the Supply Department. The fourth floor is entirely occupied by the operating room. This room is 42 by 51 feet, including the battery room in the northwest corner, 15 by 19 feet. The room is furnished with twelve ash tables with oiled walnut finish, each four by six feet, and containing four instruments. The table is divided lengthwise by a plate glass partition about two feet in height, while in the centre rises the gas pipe, furnished with Argand burners and ground glass shades. All the instruments are of one pattern, and were manufactured by the company, with the "wedging" improvement of Mr. Charles Summers. The switch board is a beauty, its size being 43 by 44 inches, and containing over 10,000 pieces of brass. The chief advantage of this board is that it occupies less space and accommodates more wires than any other board in the United States. It was made at the company's shops at Ottawa, from a design by Mr. Henning, Superintendent of the shops. The face of the board has a beautiful appearance, it being set in an ash and walnut frame and the brass lacquered; the connections are made with brass plugs. While a party of the "boys" were admiring

its many beauties, a few days since, one of them remarked "that undoubtedly the company would have increased litigation at this point on account of employing so many plugs!" Upon the perpetration of this miserable joke some of the party incontinently left for "Schaefer's," to tackle a mineral water bottle, and the perpetrator would have "followed suit" had he not been seized immediately and rubbed down with a Brooks insulator, which, of course you know, renders escape almost impossible. (I don't charge Brooks anything for this puff, so don't let him be caught *murmuring*.) The main batteries, one of sixty and the other of fifty cups, occupy the room heretofore mentioned, and a pneumatic tube conveys the messages to and from the receiving and operating rooms.

The force of the office is as follows:

Geo. T. Williams, *District Superintendent*.
Chas. S. Lamb, *Secretary*.
F. A. Armstrong, *Manager*.
B. H. Johnson, *Chief Operator*.
A. Peck, *Assistant Chief Operator*.
A. T. Gould, *Night Manager*.

The day operators are:

C. L. Snyder,	H. H. Scobell,
O. K. Newton,	J. H. McGuire,
G. H. Everett (the veteran),	J. S. Williams,
J. E. Hadley,	Geo. Neakle,
L. D. Hamilton,	T. H. Radford,
John Maguire,	C. S. Kinney,
L. D. Johnson,	T. Fulton,
Wm. Britton,	S. B. Roberts.

And, in the Commercial News Department, Wm. Fellows and C. Selden, Jr.

The night operators are:

J. W. Smith,	D. W. Warner,
R. A. Furr,	Geo. A. Clark,
A. Kern,	J. T. Stevenson,
J. D. Thurston,	C. F. Webb,
E. T. Gilliland,	E. B. Groton.
B. F. Coan,	

In the Delivery Department are C. W. Barnes, clerk, and W. R. Morehouse, assistant. In the Receiving Department, W. J. Lawler, book-keeper; J. C. Hall, assist. book-keeper; A. H. Graham, night receiver; Mrs. F. L. Webb, receiver; Miss F. H. Curtis, assist. receiver; W. F. McClure, clerk, and M. C. Newman, collector. Mr. H. D. Rogers, agent C. N. D., and Samuel Taylor, clerk. Patrick Whelan and James Reilly do the repairing in and around the city, and Michael Downey "tinds the batteries."

ALERT.

Again that Steel Wire.

SAN FRANCISCO, CAL., July 26th.

TO THE EDITOR OF THE TELEGRAPHER.

ON the editorial page of THE TELEGRAPHER for June 25th appeared an article headed "That Steel Wire again," based upon information received from this city. Every sentence of the article is incorrect, although appearing as an editorial. This letter is addressed to your informant, and we ask him to either acknowledge his error or explain wherein this reply is not true. It is now simply a question of veracity. From the article I quote:

"We have received a specimen of this wire (used by the 'C. P. R. R. through the snow belt') which we are informed is mostly strung out of the snow line and not an inch of it in an exposed situation."

Your informant has acknowledged to me that he has never been east of Rocklin, on the line of the railroad, and as Rocklin is at the foot of the "grade," he can know nothing personally concerning the country through which the line is built. He has never seen any part of the snow sheds, nor been through the snow belt—still he says "not an inch of the line is in an exposed situation." From Rocklin to Truckee the distance is 97 miles, but a very small portion of this distance is covered by the sheds. The greater part of the wire is in an "exposed situation," and no person who had been over the line would have made a statement so absurd.

"Of course such lines cannot work well." But they do work well, and have not been interrupted a single hour during the past ten months. One circuit, 800 miles in length, is worked every day without repeater or intermediate battery. Business and eastern report is never repeated west of Ogden—quite often Chicago sends to us direct, and we are told by him that San Francisco comes clearer than New York. Still we must read that our line is a failure.

"Obliged to maintain 150 cups of battery at Sacramento, 75 at San Francisco." Neither of these statements is correct.

The most objectionable portion of the article is that which reads "a careful test of the wire shows a resistance of 63½ ohms to the mile." I do not believe any one, excepting your informant, would have made such a mistake. When about to open the commercial office in

San Francisco, it was found necessary to use a very light wire, that could be drawn taut from the office pole to the roof of a building, in order to clear the Western Union wires.

A very small galvanized iron wire was procured for this work. Your informant happened near the office at the time, and picking up a small piece of the wire, jumped at the conclusion that it was the same as in use through the snow belt. With all haste he rushes to Lundberg's—gets Lundberg to test it for him—63 ohms to the mile—and at once despatches a letter to THE TELEGRAPHER, and your article on "that steel wire" is the result. Some person probably told him it was steel, and the youth not being able to tell the difference between steel and iron wire, supposed it to be the same as that strung through the snow belt. A few days afterwards I came to San Francisco, met "your informant," when he related what had been done, and the result of the test. The next day it occurred to me that he might have been mistaken in the wire, and the mistake was discovered when we told him he had not tested the mountain wire. The statement that the Atlantic and Pacific States Company performed with 18 cups work similar to that for which the Railroad Company maintain 225 cups, is too absurd to notice.

Will your informant attempt to deny either of the following assertions?

A specimen of the steel wire was not sent by him to THE TELEGRAPHER. He has never tested it—nor seen any part of the line, or even a sample of the wire.

At least one half the line through the snow belt is exposed to storms from October until May.

The line is not strung out of the snow line.

The Central Pacific Railroad line has not been interrupted one hour during the last ten months.

The railroad company does not maintain 150 cups at Sacramento nor 75 at San Francisco.

The Atlantic and Pacific line did not do similar work to that done by the Central Pacific line with 18 cups of battery!!!

"A very careful test of the steel wire does not show a resistance of 63½ ohms to the mile."

Perhaps "Ixion" will stir up the animals a little for our amusement. GRASS VALLEY.

Note.—The specimen of wire sent us was certainly of steel, and as near as could be judged from so small a piece, would measure about 60 ohms resistance to the mile. It has been mislaid or we should have forwarded it to "Grass Valley" for inspection. If G. V. will send us a piece of the steel wire actually used in the snow belt on the Central Pacific line, we will have its resistance carefully measured and give our readers the result.

—[EDITOR OF THE TELEGRAPHER.

PERSONALS.

Mr. GEORGE IRWIN, formerly of the U. P. Railroad, Como, W. T., has accepted a position as operator in the Western Union office at Denver City, Colorado.

Mr. S. J. MILLS has been appointed chief operator and Circuit Manager of the Eastern Iowa Division of the C. and N. W. Railroad, at Clinton, Iowa.

Mr. H. C. MARKS has been transferred to the Harvard, Ill., office of the C. and N. W. Railroad.

Mr. ORVILLE COATS, formerly of the Western Union, Utica, N. Y., has accepted a position in the Albany, N. Y., office, same company.

Mr. JOHN G. HALE, formerly of the Western Union office at Rolling Prairie, Ark., has been transferred to the Augusta, Ark., office of that company.

THE TELEGRAPH.

(By Cable.)

PROGRESS OF THE LAYING OF THE PANAMA AND WEST INDIA CABLE.

HAVANA, July 22d.—The Panama and West India Cable Company have commenced operations. Twenty-five miles of the cable have been laid across the flats opposite Cape Cazonos. The Dacia will begin to-morrow and lay the western end to Batabano. The Suffolk will immediately embark the eastern end, which she will lay to Santiago de Cuba. It is expected that telegraphic connection with Santiago de Cuba will be completed within a week.

HAVANA, July 25th.—The Panama and West India Cable Company's steamer Suffolk, accompanied by the Spanish gunboats, arrived off Batabano to-day. Preparations are being made to submerge the cable. The shore end will be landed at a point between Batabano and the Gulf of Casanos. After the splicing is made twenty-five miles will be submerged by lighters in the shallow

waters, when the Dacia will continue with the remainder to Jamaica. All engaged in the expedition are well contented with the progress made thus far.

HAVANA, July 26th.—The shore end of the Panama and West India Cable was successfully landed at two o'clock this afternoon at Batabano. Batabano is in perfect communication with the steamer. At five o'clock to-morrow morning the Suffolk, accompanied by the Spanish gunboats Alerta and Telegrama, will begin paying out the deep sea cable.

HAVANA, July 27th.—The Panama and West India Cable Company's steamer Suffolk sailed from Batabano this morning, to lay the cable to Cayo Juan Ruiz, at which place she will unite it with the twenty-five miles already laid across the Keys. The steamer Dacia will sail from Cienfuegos, and connect the other end with Cayo Diego-Perez. The united squadron will then proceed to Santiago de Cuba, making no landing at Cienfuegos; but a bend will be made in the cable opposite that place, so that at some future time a connection may be made between the main line and Cienfuegos.

TELEGRAPHIC CORRESPONDENCE.

LONDON, July 25th.—No restriction has been placed by the French Government on telegraphic correspondence, except that the transmission of despatches in cipher is prohibited.

THE TELEGRAPH CLOSELY WATCHED.

LONDON, July 26th.—The news received by way of Berlin is very meagre, which is due to the prudence of the Prussian Government. The telegraph is closely watched.

Telegraphic Communication with Brazil.

A CORRESPONDENT of the New York Herald writes from Rio Janeiro, June 24th: "It would seem that Brazil will get no cable communication with Europe or the United States for some time longer, as the advices from London say Ballestrini demanded such high compensation from capitalists that, even in the height of the cable fever, he could not form a company, and now that cable enterprises are at a discount, he is still less likely. If, however, he fail to commence within the time fixed, the temper of the Brazilian Government appears to be such that it will not renew, but will concede to other parties. At present, however, it seems as though the first telegraphic communication with the United States and Europe will be through the River Platte and Chile, which will join the Pacific line."

The New Cable between England and France.

THE new cable for the Submarine Telegraph Company, to be laid from Beechy Head to Cape Antifer, near Havre, a distance of about 70 miles, has been commenced at Mr. Henley's works at North Woolwich, and will soon be completed. It forms a large, massive cable, and will be one of the largest yet manufactured. The core consists of six insulated conductors, wormed and served in the ordinary manner; each conductor is a strand of seven wires, weighing 107 lbs. per nautical mile, and insulated with three coatings of Chatterton's compound and three of gutta-percha to the weight of 150 lbs. per mile. The served core is sheathed externally with 12 No. O. B. B. galvanized iron wires, protected with two servings of tarred hemp and bituminous compound. The shore ends have a similar core, but are sheathed with 12 No. 0000 B. B. galvanized iron wires, protected with two servings of hemp and compound. This is the first time wire of such enormous diameter has been used for submarine cables. Land lines for this cable are being erected between London and Beechy Head, and Havre and Paris, so that the new line will be an independent one, and will tend to obviate, if not prevent, the delays which have frequently occurred in the transmission of messages between London and Paris, arising chiefly from a pressure of business. In future any breakage which may take place in the old and new lines will be quickly repaired, because, under the authority given lately, the company will conduct repairs with their own repairing ship, instead of employing a tug, as hitherto.—*Mechanics Magazine.*

FOREIGN TELEGRAPHIC NOTES.

SHIPMENT has commenced on board the Hibernia of a portion of the British Indian Extension and Australian cables. This vessel proceeds to her destination via the Cape of Good Hope. The remaining sections will be forwarded by the Suez Canal in various vessels.

An improvement in ink recording instruments has been introduced by Mr. Brittan in the manner of inking. In the reservoir containing the ink revolves a small wheel, notched in the periphery; this is in connection with the

train of wheel work, and when the machine is set in motion revolves at a high rate of speed, carrying with it the ink; it carries the ink round, and in such a quantity as to increase the diameter of the wheel from the size of about a sixpence to that of a shilling. The ink is thrown by centrifugal force against a hollow in the top of the reservoir, having a nipple and fine hole on the outside, against which the paper is pressed when marking is required. It answers in practice perfectly, and is found to be not only efficacious but very clean.

A special report has been issued by the directors of the Anglo-Mediterranean Telegraph Company, in which they point out the necessity of duplicating the Company's main line, in order to accommodate the traffic obtained through the arrangements with other companies, and state that they have made a provisional contract with the Telegraph Construction and Maintenance Company to lay a similar cable to the existing one by December next for the sum of £180,000. To meet this outlay it is proposed to create further capital to the amount of £170,000, and to appropriate £11,000 from the reserve fund. It is also proposed to convert the entire capital into stock. At a meeting held on Wednesday, June 28, this report was adopted.

The final shipment of the Marseilles and Algerian cable had been completed on board the William Corry, and the ship left during the second week of July for Marseilles. Paying out from Marseilles to Bona was expected to commence by the 25th inst. The amount of cable on board was 470 nautical miles, of which sixteen miles were shore ends. The manufacture of the remainder of the cable, from Bona to Malta, is being proceeded with.

The British Post-office has just introduced a bill into the House of Commons for extending the Telegraph Acts of 1868-69 to the Channel Islands and to the Isle of Man. It has been referred to a select committee, and slightly amended.

New Patents.

For the week ending July 19, and each bearing that date.

No. 105,494, antedated July 8, 1870.—ELECTRO-MAGNETIC GATE OPERATING APPARATUS. William Robinson, Brooklyn, N. Y.

Claim.—1. The combination of the levers *c* with the gate B and circuit closer to a battery, arranged so as to operate the gate by the action of the passing vehicle, substantially as specified.

2. The combination, with a circuit closer, arranged for operation by the vehicle, while in motion, of clock work for prolonging the action to said circuit closer and operating to keep the armature of the magnets in prolonged hold on or control of the gate, substantially as specified.

3. The circuit closer, or its stand or frame, or a portion thereof, hung or arranged so as to be shifted out of working position on and by a vehicle or train passing in the one direction, and afterward returning to its normal position for control of the circuit closer by a vehicle or train passing in the opposite direction, essentially as herein set forth.

No. 105,552.—SYSTEM OF FIRE ALARM AND POLICE TELEGRAPH. Sylvanus D. Cushman, New Lisbon, assignor to the Automatic Fire Alarm Company, Leetons, Ohio.

Claim.—1. The continuous fire alarm telegraph circuit herein described, the same consisting of a continuous metallic circuit, or a continuous ground and metallic circuit, provided with suitable battery power, and embracing all the signal boxes at various points in the city, or a large portion thereof, and electric magnetic sounders at each of the fire department offices, so that an alarm given at any signal box will be at once announced to every fire department office without giving a public alarm, substantially as specified.

2. The arrangement of a continuous fire alarm circuit, embracing all the signal boxes and fire department instruments in two or more loops, and the combination of the said loops with the sections of the circuit battery, so as to distribute the battery into the circuit, substantially as herein specified.

3. The combination of a continuous fire alarm circuit, embracing all the signal boxes and fire department instruments, and arranged in two or more loops; a circuit battery, divided into two or more sections, and a switch board provided with suitable switches, and so combined with the circuit and battery as that said circuit can be worked as a continuous metallic circuit, with distributed battery, or as a continuous ground and metallic circuit with distributed battery, or as two or more ground loops or metallic loops, each with its own battery section, substantially as is herein specified.

4. The combination with a fire alarm circuit, embracing all the signal box and fire alarm instruments, of a talking or police circuit, working independent of the fire alarm circuit, but having an electro-magnetic sounder at each of the fire department offices in the fire alarm circuit, substantially as and for the purpose specified.

5. The combination with the telegraph instruments in those fire department offices, having an instrument on both the fire alarm and police circuits, of one or two ground wires with accompanying switches, the several parts being arranged substantially as and for the purpose specified.

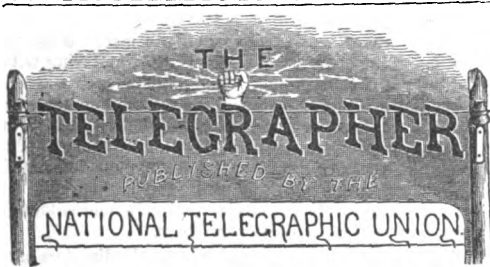
6. The combination with a fire alarm signal box of two ground switches, located on the main fire alarm circuit, one at each side of the operating mechanism, and arranged to connect with suitable ground wire or wires, substantially as is herein specified.

7. The combination of a cross ground wire with the loop of a fire alarm circuit, substantially as and for the purpose specified.

8. A continuous fire alarm circuit, provided with suitable battery, and embracing all the signal boxes and fire department instruments, said signal boxes being provided with such operating mechanism as that the closing of the signal box door switches the electro-magnets out of the main circuit, thus obtaining a combined working and reserve circuit, substantially as specified.

BORN.

SNIDER.—July 14th, a son to E. N. SNIDER, Clinton, Iowa. First edition.



SATURDAY, JULY 30, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

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A LITTLE TIMELY CAUTION AND ADVICE.

THE present summer is the hottest that has been experienced for many years. Day after day, in this city, the thermometer has reached from 90° to 98° Fahrenheit, and in some localities from 5° to 10° higher has not been unusual.

To telegraph operators this intense heat is very trying, and unless more than usual attention is paid by them to the preservation of their health, they are likely to suffer severely before the season is over. Compelled as they are to labor from eight to twelve hours per day, often in ill-ventilated offices, they are peculiarly liable to prostration and sickness. Especially is this the case with those employed upon night duty; when, in addition to the normal heat and oppression of the close atmosphere, they are subject to the increased temperature and consumption of air of the numerous gas burners necessary to enable them to discharge their duties.

Under these circumstances there is an unusual necessity for them to pay strict attention to their diet, and exercise other sanitary precautions. They should dress lightly; avoid all excess, either of eating or drinking, and in all things endeavor to live regularly and plainly. They should avoid the use of all descriptions of spirituous liquors as rank poisons. They inflame the blood, tend to excite and disarrange the cerebral functions, and produce prostration of the vital powers, insanity and death. Excessive use of ice water, and cold drinks of all descriptions should also be avoided. All who can do so should take a week or two vacation, and by a cessation of labor for a season, recuperate and strengthen their vital powers. Formerly it was the custom of all telegraph companies to allow such of their employes as desired it a vacation during the summer season. This we believe was a good custom, beneficial alike to employers and employes. It has gone out of fashion, however, and now those who desire such brief relaxation must provide a substitute at their own expense during their absence, provided they can find one. The Western Union Company was the first to refuse to sanction vacations to its employes, except upon the condition of providing a substitute. For a time this created much discontent among operators, and "Vacations" was for some years a very popular subject for the correspondents of THE TELEGRAPHER to dilate upon. Apparently, however, they seem to have accepted the decision of the Managers as irrevocable, and thus far we have not as yet received a single communication this season upon this once fruitful theme. We believe, however, that in this matter right, justice, and expediency were on the side of the operators, and that telegraph companies in reality make no saving by niggardliness in this respect. Those who work faithfully through the year are entitled to some consideration, and when an interest is thus shown in their welfare and comfort, it is re-

ciprocated by a better feeling and more earnest effort on behalf of the employers. One of the principal reasons which operators have given us for their desire that the Postal Telegraph should succeed, has been that Government employes are allowed vacations as a matter of right. While in this one respect it is probable that operators would be somewhat better off in Government than in private employment, yet in many others the change would be unfavorable to them, and we are satisfied that on the whole they are better off with the telegraph in private hands. We should be pleased to have the old custom of vacations to telegraphers revived, and if any company extends this favor to its employes we should be glad to make honorable mention of the fact in our columns.

If, however, the telegraph Managers cannot be induced to provide for vacations, let operators arrange among themselves to employ a relief operator on a circuit where it is necessary. The expense to each one will not be very large, and the benefit derived from a temporary relief from work will be felt throughout the year. The scarcity of good operators just now may interfere with such an arrangement, but some way can be devised in almost every case for securing the desired relief.

The life of a telegraph operator at the best is not a very easy one, but under existing circumstances it is a peculiarly trying business. Still, with the exercise of moderation, care and temperance, they may get through the season without severe suffering. We have desired to give our telegraphic friends some wholesome and needed advice and caution in this matter, and trust that they will receive it as it is intended, in all sincerity and kindness.

The Fire Alarm Telegraph Completed.

ON Saturday last the lines of the new Fire Alarm Telegraph for this city—constructed under contract by C. T. & J. N. CHESTER—above Fourteenth street, were completed. That part of the system below Fourteenth street was completed some time since, also the work at the Central office, of which a detailed account has heretofore appeared in this paper. We congratulate the CHESTERS upon this successful accomplishment of the arduous task of erecting an entire new Fire Alarm Telegraph for this great city.

Important to Railroad Managers.

A WELL known telegrapher, now occupying an important telegraphic position, but who desires to make a change, is desirous of obtaining a situation as Superintendent or General Manager of a railroad telegraph line, preferably at the West. We are personally acquainted with the gentleman, and know him to be perfectly competent as an electrician, a telegrapher, and as a manager to fill such a position with great credit to himself and to the interest and advantage of his employers. As an electrician he has few superiors in this country, and under his management a line would be economically and scientifically managed, and the best possible results obtained. Applications may be made in confidence to the editor of THE TELEGRAPHER.

Accident.

WE regret to learn that Mr. E. M. PIERSON, Superintendent of TILLOTSON & Co.'s manufactory, met with a serious accident on Tuesday afternoon last. While riding down town in a horse car the latter came in collision with a truck in Greenwich street, by which Mr. PIERSON, who was sitting by a window at the time, had one of his arms broken, besides being severely bruised and otherwise injured.

Telegraph Operators Wanted.

WE are requested to state that three first class telegraph operators, of strictly temperate habits, can obtain good situations by applying to Mr. M. K. THOMPSON, at the office of the Pacific and Atlantic Telegraph Company, No. 23 Wall street.

A New Appointment.

MR. E. D. L. SWEET, General Superintendent of the Atlantic and Pacific Telegraph Company, has been appointed General Manager of the Franklin Telegraph Company, thus bringing the two companies practically under one management. Mr. JAMES G. SMITH retains his former situation as Superintendent of the Franklin Company.

An Atmospheric Telegraph Designed to Rival the Electric.

A NOVEL kind of telegraph, the invention of Signor Guattari, an Italian, was submitted to the inspection of a party of scientific gentlemen yesterday, at a private house in Gloucester street, Warwick square. The inventor aims at obtaining, by the use of atmospheric power, the same or better results than those attained by electric and magnetic forces. To this end he charges a reservoir with compressed air, and by the operation of valves, worked in the same manner as those in use in the ordinary telegraph system, sends pulsations through a tube, which pulsations are made to work upon the receiving instrument with an effect corresponding with that of the electric current passed along insulated wires. The invention has been so fully recognized by the Royal Institution of Naples that they have paid to Signor Guattari the rare compliment of awarding him a gold medal. It is further reported that the system is to be generally adopted on board the Italian ships of war for the transmission of orders from the commanding officer to subordinate departments.

At the experiments yesterday there were present the Italian ambassador, Count Maffei, a gentleman from the engineering department of the postal telegraph, a representative of the Kensington Art Department, and contributors to scientific journals and the general press. The working apparatus was all contained in a stand or table about eight feet long by five wide and four deep. Air pumps worked by a crank are used to charge the reservoir. The amount of pressure is shown on a dial. The telegraphic instrument is worked by hand in the ordinary way. A very considerable coil of gutta percha tubing, half an inch in diameter, and said to be about a mile in length, was connected with the instrument at the battery and with two other instruments in the room. The experiments began by the charging of the reservoir to about one sixteenth of its actual capability—this being, at the same time, a comparatively crude though not unsightly machine. The method adopted for the working of the Guattari is the Morse or printing cipher system. Signor Guattari, at the transmitting end, sent through this message: "This apparatus has already experimented on the plebiscite." The words were recorded in cipher at the receiving end, and were read off by the gentleman from the post-office, who remarked, however, that in two or more instances the letters had run into each other. The same authority found the valve at the transmitting end difficult to work, and requiring a manual pressure of something like seven pounds, instead of the mere touch required by the Morse instruments. In operating on it himself he sent through the alphabet correctly, and transmitted all the messages he attempted with accuracy. This was done through a line of tubing partly wound round a drum, and partly lying in an irregular heap on the floor. In actual service lead tubes might be used. Experiments were next tried on the apparatus for communicating with various parts of a ship, and subsequently with what may be called the domestic telegraph. In this case Signor Guattari dispensed with the use of the reservoir, and, by mere manipulation of an air ball at the end of a tube, recorded true cipher characters on the long strip of paper which runs over the small wheels of the receiving instrument. This is the kind of telegraphy to which the Guattari apparatus will probably prove best adapted. In large hotels, in ships of war, in communication from factories to counting houses, from private residences to places of business, and in town communication generally, the system promises to be advantageous. It is independent of foreign aid, is less likely to get out of order than wires conducting electric currents, and will not be more expensive. For longer distances, on regular public lines, the invention would probably not apply so well, or work so rapidly as the present telegraphs. The inventor is, however, equally sanguine in this as in smaller branches, and claims, not without reason, that his apparatus will be less expensive than electric batteries, and will be less subject to the influence of those atmospheric storms which sometimes put the telegraphic system of a whole country out of order.

Signor Guattari was heartily congratulated on the performance of his apparatus. The new telegraph certainly reflects high honor on the inventive genius of its originator.—*London Telegraph*, July 12.

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LONG LENGTHS!! FEW JOINTS!!

SUPERIOR QUALITY! LOW PRICES!

The Wire manufactured by Messrs. **RICHARD JOHNSON & NEPHEW**, Manchester, England, has attained its celebrity on this Continent mostly from its long lengths—a joint occurring only on the average once in about 1,200 feet. The advantage of this feature will be apparent to all telegraph constructors. It is accomplished by a process peculiar to Messrs. JOHNSON'S establishment, and they are the only manufacturers in England who can do it.

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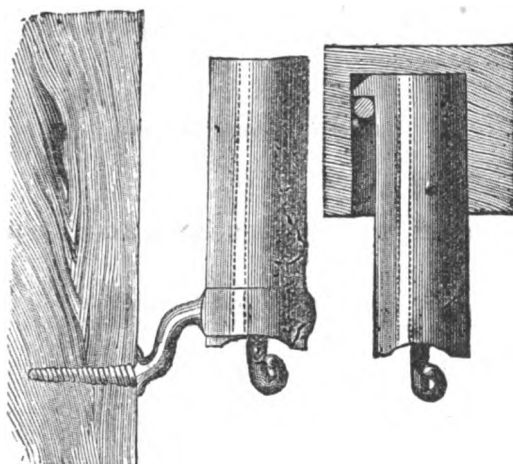
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FOR CROSS-ARM.

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Its insulating properties exceed those of the glass a hundred thousand fold.

In strength and durability it has no equal.

They are warranted not to break or part.

They are made with a screw shank, to fasten into the pole, price 38 cents each, or without the screw, for cross-arms, 30 cents each.

Pamphlets furnished, with full description.

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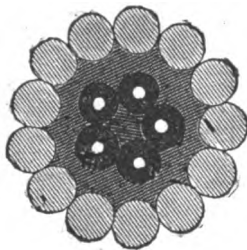
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SUBMARINE TELEGRAPH CABLES,

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TELEGRAPH AND ELECTRIC USE, and for

BLASTING AND MINING PURPOSES,

in every variety desired.

As an Insulation for Telegraph Cables and Electric Conductors GUTTA-PERCHA has been universally adopted by all scientific and practical Electricians and Manufacturers of Telegraph Cables and Wires in this country and Europe, and has sustained, with increasing confidence in its superiority, the practical test of over twenty years' general use.

The PROPRIETOR would say, to all parties desiring

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that he will guarantee to make and deliver at his Factory any style of Cable, Insulated with Gutta-Percha, as low as they can IMPORT Cable of the same style and quality.

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BLISS, TILLOTSON & CO.,

247 SO. WATER ST. CHICAGO, ILL.,

have been appointed by me GENERAL AGENTS for the sale of any Telegraph Cable or Wire manufactured at the Works in New York, at Factory Prices, delivered in New York.

JOHN THORNLEY, 503 Chestnut St., Philadelphia,

has been appointed Agent for the sale of any and all goods manufactured by me, at Factory Prices, delivered in New York.

SPECIAL AGENTS IN NEW YORK,

for sale of all goods (except Telegraph Articles), are

H. G. NORTON & CO., 26 Park Place,**RUBBER CLOTHING CO., 347 Broadway,****A. D. & C. A. HODGMAN, 201 Broadway.****SAMUEL C. BISHOP.**

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SUBMARINE CABLE.

A. G. DAY'S

KERITE,

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COMPOUND RUBBER COVERED WIRE**SUBTERRANEAN & AERIAL WIRES,**

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HIGHEST INSULATION.**CHARLES T. & J. N. CHESTER,**

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offer for sale, as TELEGRAPH and ELECTRIC CONDUCTORS, Wires protected by the BEST INSULATOR and STRONGEST RESISTANT TO CHEMICAL ACTION and ATMOSPHERIC INFLUENCE.

After the experience of several years in the use of KERITE for purposes of insulation, we have concluded to adopt it as the very best substance for wire covering, not only for use of offices but for SUBTERRANEAN, SUBMARINE and AERIAL LINES. We have used it unprotected for years under ground, and exposed to the most injurious atmospheric influences—to heat, cold and moisture—and have yet to learn its failure, when other ordinary insulating substances would have been rapidly destroyed. UNDER WATER it has retained an electrical charge for many hours, thus ranking it in the HIGHEST GRADE of NON-CONDUCTORS.

We have, therefore, made arrangements not only to secure THE EXCLUSIVE AGENCY for its sale, for the purposes for which we have already sold it so largely, but to furnish complete

IRON-CLAD CABLES,

of the usual size, with KERITE COVER, believing that it will exceed, in insulation for submarine purposes, ANYTHING HITHERTO MANUFACTURED.

We shall be happy to furnish estimates for any amount and size of cable, which will be found to compete with any other construction, both in quality and price.

In corroboration of our statements we append extracts from reports of those who have exposed it to the severest practical tests.

From Prof. SILLIMAN, of Yale College, Nov. 10, 1868.

"I am satisfied, as the result of my own researches, that ozone is by far the most fatal of atmospheric influences. I have submitted portions of KERITE to the action of a highly ozonized air for a sufficient length of time to prove them, and at the same time have exposed the best English Gutta-Percha Covered Cable to the same tests, with the following result: After long experience KERITE resists perfectly! The best English Gutta-Percha Cable was speedily destroyed. A few days' exposure to ozone would produce more effect than many years in a normal atmosphere, exposed to carbonic disulphide, nitric acid, sulphuric acid, sulphuric dioxide, nitric peroxide, chlorine gas and alkaline hydrates. Gutta-Percha is immediately dissolved in carbonic disulphide, and powerfully acted upon by alkaline hydrates. Some samples of KERITE resist the action of the former in a surprising manner, and are completely unaffected by the latter."

"NEW YORK, May 14, 1870.

"In nearly two years since the foregoing was written I have made a considerable number of experiments upon the KERITE Compound of A. G. DAY, all of which tend to confirm former results; while the practical test of the continued use of electrical conductors covered with it, and the growing favor with which they are received by electricians, offers the best guarantee of its permanent value.

"B. SILLIMAN."

From MOSES G. FARMER, of Boston, Mass.

"I have tested 195 feet of this wire, and found it a better insulator than Gutta-Percha.

"The instrument used would have shown a current through 300,000 miles of Telegraph wire. The 195 feet showed no leakage in water. The KERITE insulated wire withstands atmospheric agencies wonderfully, and will last for years when exposed to the atmosphere; likewise, when buried in the earth, there is no reason to apprehend decay. It is a well known fact that Gutta-Percha deteriorates very rapidly when exposed to atmospheric influences, and therefore cannot be advantageously used for the covering of wire for out-door exposure unless buried in permanent moisture."

From Mr. E. A. CALAHAN, Supt. Gold and Stock Telegraph Co., May 14, 1870.

"Under all circumstances it has given me the fullest satisfaction. The peculiar nature of our business renders it necessary for us to use the most perfectly insulated wire. I have tried several kinds of insulated wire, but have been compelled to take down and substitute KERITE instead. Wire strung a year since is as good as the first day put up. Have tested it after three days' constant rain and could not find one degree of escape. We use it in gas pipes, and sometimes placed near furnaces subject to very high temperature. I have not been able to detect the slightest change from its original condition.

"We have exposed it to the extreme cold and heat of the past two years and a half, strung over the roofs of buildings, which we consider the best test of its indestructible and insulating qualities."

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Among other Telegraphic Supplies constantly kept on hand,
 they are prepared to furnish promptly the following novel
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KERITE (OR HORN COVERED) COPPER OR COMPOUND
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 CALCIUM LIGHTING APPARATUS,
 MEDICAL BATTERIES,
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 ELECTRO GONGS, OF ANY DESIRED SIZE OR WEIGHT,
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They guarantee to give satisfaction to all who favor them with
 orders, in the promptness of execution and in the quality of
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 MODERN PRACTICE OF THE ELECTRIC TELEGRAPH.
 BY
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COMPOUND TELEGRAPH LINE WIRE.

COPPER FOR CONDUCTIVITY.

STEEL FOR STRENGTH.

The superiority of the COMPOUND TELEGRAPH WIRE,
 compared with iron, consists in its LIGHTNESS, reducing by over
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Relative TENSILE STRENGTH, homogeneity and elasticity—de-
 creasing the liability to breakage from cold weather, sleet, etc.;

CONDUCTIVITY—insuring great improvement in the working of
 lines in any condition of the weather;

And in its DURABILITY, which greatly exceeds that of the best
 galvanized iron wire;

Altogether resulting in a very great reduction in the cost of
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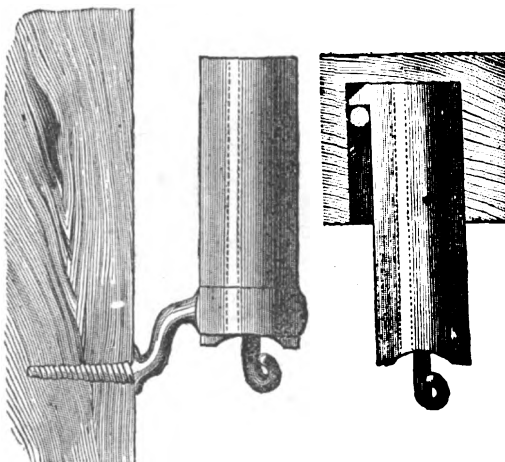
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Every report received from them is of the most favorable
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GENERAL AGENTS for the sale of any articles manufactured by him for

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They are now prepared to fill promptly any orders for goods on hand, or to be manufactured, at the *Manufacturer's prices in New York.*

The long experience of Mr. SAMUEL C. BISHOP, in the manufacture of

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SUBMARINE TELEGRAPH CABLES

AND

INSULATED WIRES

of various kinds, insulated with

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Gutta-Percha covered Telegraph Office Wire, in great variety of size and style.

SUBTERRANEAN WIRES, covered with Gutta-Percha and Lead outside, various sizes.

SUBTERRANEAN WIRES with Gutta-Percha and braided fibre, and Bishop's Patent Compound outside.

SUBTERRANEAN WIRES, with Fibre and Bishop's Patent Compound outside.

POLE LINE CORDAGE, with Fibre, and Bishop's Patent Compound outside.

BRIDGE'S Patent Electric Cordage.

BRIDGE'S Patent Double Covered Cordage.

BISHOP'S PATENT COMPOUND WIRE,

for out-door use and office connections.

INSULATED WIRES,

with two Conductors, both plain and with braid outside, and a great variety of other kinds made to order.

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This arrangement,

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"THE TELEGRAPHER"

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Having adopted the use of

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which is much RICHER and FINER than brass, he now presents his work in a style and of a quality that are unsurpassed. His relays were awarded the

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at the late Great Fair of the American Institute, New York, and their superiority is generally acknowledged by operators who use them.

Aside from the advantages apparent upon inspection of these magnets, their acknowledged merits consist in the construction of the helix, which was patented Aug. 15, 1865. This being of naked copper wire, so wound that the convolutions are separated from each other by a regular and uniform space of the 1-800th of an inch, the layers separated by thin paper. In helices of silk insulated wire, the space occupied by the silk is the 1-150th to the 1-300th of an inch; therefore a spool made of a given length and size of naked wire will be smaller and will contain many more convolutions around the core than one of silk insulated wire, and will make a proportionally stronger magnet, while the resistance will be the same.

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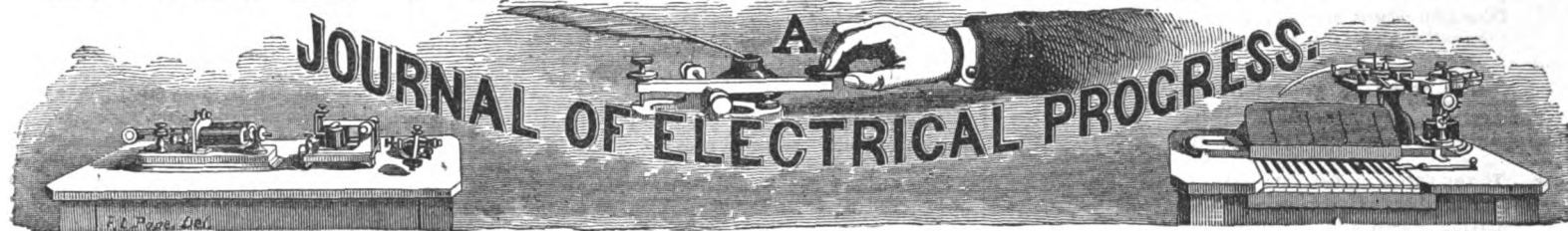
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All other appliances made to order. Extra spools for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post office order, in which case he will make no charge for package. He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

THE TELEGRAPH.



Vol. VI.—No. 50.

New York, Saturday, August 6, 1870.

Whole No. 212.

REVIEW OF REPORT OF THE SELECT COMMITTEE OF U. S. HOUSE REPRESENTATIVES ON THE POSTAL TELEGRAPH.

(Continued.)

MR. WASHBURN devotes a considerable space to, and lays much stress upon the proposition that a reduction of the tariff will produce an increase of the business. He quotes largely from European reports of the operation of telegraphs to prove this. It is, however, so self-evident, that it would seem hardly essential to attempt so labored an elaboration of the statement. It may be conceded at once, and probably no one who understands human nature, or has had experience in the telegraph business, will attempt to deny it. But, to offset this conceded increase of the business, there is, with a reduction to the rates proposed, a more than proportional increase in the expense attending it. The experience of the Western Union and other companies in this country has demonstrated this fact. The writer can well recollect a time, in 1852, when messages were transmitted between Boston and New York and some intermediate stations for ten cents. The consequence was that all the lines were crowded with business, and all were losing money very rapidly. After a few weeks' experience the price was, by agreement of the competing companies, raised to forty cents, and, although the amount of business done was immediately and largely decreased, there was a margin for profit.

Recently the Western Union and other companies have materially reduced the tariffs to a large percentage of the offices. The natural consequence followed. All are doing a much larger business, and the Western Union Company was obliged to pass its July dividend, and the stockholders receive only two per cent. for the current year. Under the increase of business the Western Union receipts for May reached the old figures, but on account of the unavoidable increase of expenses the net profits are still largely in arrears.

Mr. Washburne charges that there is no guarantee in this country for the transmission of despatches in their order as received, or for their secrecy, other than the good faith of the company or its employés. Unfortunately, this is true; but this defect may be remedied by stringent legislation, binding upon all companies, as well as by the Government monopolizing the business. Mr. Washburne proceeds to cite extracts from a pamphlet published some time since by the Western Union Company, setting forth the facts and arguments antagonistic to a postal telegraph system. He makes a strong point of the fact that the same line of argument is used, and, in some instances, the same language is found in a similar pamphlet, published in England by Robert Grimstone, Chairman of the Electric and International Telegraph Company, in opposition to the establishment of a postal telegraph in Great Britain. The bearing of this objection is not very plain. The proposition is the same, and the arguments used against it would naturally be similar, if not identical, varied only by the difference in the situation of the two countries. He instances statements made in that pamphlet, and attempts to demonstrate their incorrectness. The limits of this paper will not admit of our analyzing Mr. Washburne's criticism in detail, but it is another illustration of how figures, differently considered, may be made to give different results.

Switzerland and Belgium, the paradise apparently of Government (not postal) telegraphs are relied upon to demonstrate the advisability and superiority of the Government telegraphic administration. As has already been shown, the deficit of telegraphic receipts over expenditures is considerable, and in Belgium there is an admitted loss on the internal business which, as in other European countries, is made up by taxing its neighbors. M. Vincent, Belgian director of telegraphs, in a letter to Mr. Gardiner

G. Hubbard, under date of February 28, 1870, which is published as a part of Mr. Washburne's report, says:

"The internal service has always been in arrears, and the deficit has been increased in nine years 161,000 francs by the reduction of the tariffs. But these reductions have caused four times the number of despatches which would have been sent at the old rates."

This demonstrates the soundness of the argument that cheap rates can only be established at a loss either to private companies or the Government.

An attempt is made to discredit the statement in the Western Union pamphlet that in France the telegraph is regarded as one of the most important arms of the Government; that is, that it is subjected to a Government surveillance at all times. To this end an extract is given from a communication from Viscount de Vougy, director-general of French telegraphs, in which he says:

"The only control exercised by the Government over telegraphic correspondence is that prescribed for it by interior legislation and international conventions; i. e., that it is exclusively limited to despatches whose contents are of a nature to affect the security of the state or the laws of the land, and the exercise of this right has never occasioned any serious complaint."

If this is not conceding what is charged we do not understand the meaning of language.

In reviewing the speech of Mr. Orton before the Committee, which is published in the appendix of the report, Mr. Washburne sums up the arguments of the opposers of the Government system under four heads.

1st. That telegraphing is cheaper in this country than in Europe.

He then figures out as satisfactorily to himself that the relative cost in Europe is less than in this country, as the opponents of the postal system do the contrary. Admitting that in this Mr. Washburne is correct, the comparative expense, taking into account the differences in distances, population, etc., between this and European countries, cannot be considered as in excess of the latter. And, in addition, it should be stated that the rates are being reduced here more rapidly, as is shown by the financial results, than the circumstances will warrant.

2d. That a Government system in this country would entail a heavy expense on the public.

Mr. Washburne does not concur in this objection. Still he says "The Committee are far from admitting that a Government system needs to be self-sustaining, although they believe that it would be." He proceeds to argue that it is not more required that the Post-office should be self-sustaining than our Public School system. He compares the opposition to cheap postage in England to that of the postal telegraph. Now, it should be understood that the opponents of a Government telegraph system do not admit that any proper comparison can be made between it and the postal system. The carrying of letters is a totally different business from that of the transmission of telegraph despatches. They do not assimilate, either in method, cost or result. A large increase in the legitimate business of the Post-office necessitates only a slight increase in expense. A considerable increase in the telegraph business, as has been shown, at once and permanently necessitates a proportional increase in the capital employed and in the expense. But, assuming for a moment that the two may be legitimately compared, the result of cheap postage in this country thus far does not warrant the belief that cheap telegraphing can be made self-supporting, to say nothing of profits. And here the different conditions under which such experiments are tried in this country and in Great Britain are shown in the result. While in the latter country, owing to its limited and densely populated territory, penny postage pays annually to the Government a large profit, in this country there is an annual deficit of from four millions to six millions of dollars. With the telegraph added as a part of the postal system the deficit would not be less than from ten millions

to twelve millions of dollars per annum, and this, in addition to the amount required to acquire the existing telegraphs of the country, and to improve, extend and increase them, to enable them to do the increased amount of business which so large a reduction of charges as is proposed would insure.

The California lines are cited by Mr. Orton as an illustration of what the result of such a reduction as is proposed in Mr. Washburne's bill would effect. He shows that while the lines would be overwhelmed in the business, the receipts would fail to pay expenses. By figuring expenses down, and the receipts upon a suppositious business of one million messages, Mr. Washburne figures out a small profit on the California lines, under the case as put by Mr. Orton, but is candid enough to admit that it is not expected that on extreme distances the low rates will be self-sustaining; but it is expected that all such deficiencies will be made up on shorter lines and in the more thickly settled parts of the country, as is the case with the postal service. The annual deficit in the revenues of the Post-office Department, before alluded to, shows that neither in that service or in that of the telegraph can these deficits be made up.

(To be Continued.)

The "Siphon-recorder" for Submarine Cables.

At an entertainment recently given in London by Mr. Pender, the Chairman of the British Indian Submarine Telegraph Company, Sir William Thompson's "siphon-recorder" was exhibited for the first time in England. This remarkable instrument writes down in ordinary ink every fluctuation of the electric current received at the end of a submarine cable, and is likely to displace everywhere the mirror galvanometer, by which, hitherto, all messages through long cables have been received. The older instrument shows every change, by the waving backwards and forwards of a little spot of light, leaving no trace of its wayward motions. It is almost incredible that men should acquire the skill required to disentangle at the moment the complex motions of this little spot, distinguishing the effects of earth currents, old signals, induction, and what not from the true signal; even with the greatest skill many repetitions are required, and some uncertainty often hangs on the interpretation of a word. The new instrument receives and indicates everything indicated by Sir William Thompson's earlier invention, and writes it indelibly; this is accomplished without any sacrifice in the sensitiveness of the instrument. A very fine glass siphon waves to and fro over a running strip of paper without touching it, and from this siphon ink is spirted on to the paper by a series of electric sparks, these sparks being generated by a peculiar induction machine. This fine rain of ink leaves a trace of the position of the siphon at every instant, in a fine continuous line. The siphon follows faithfully the rise and fall of the received current, and these alternations are arranged so as to form an alphabet, as in the usual single needle instruments. The rain of ink opposes not the slightest resistance to the free motion of the siphon. The instrument has been doing commercial work on the French Atlantic cable for a couple of months in the island of St. Pierre, and its use on the Indian lines will be followed by increased speed and accuracy. The wonderful delicacy of the "siphon-recorder" is indicated by the fact that it has recorded messages at St. Pierre sent by a rival company's line, although no metallic connection existed between the two lines, which nowhere approached one another nearer than a quarter of a mile. Tapping a rival line in war is a common incident enough, but to tap it without ever going closer than a quarter of a mile of it, is indeed a novelty.—*London Times.*

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

The Postal Telegraph Favorably Considered and Advocated.

WASHINGTON, D. C., Aug. 1st, 1870.

TO THE EDITOR OF THE TELEGRAPHER.

THE labors of your regular correspondent, "Capitol," having ceased with the adjournment of Congress, and those of "Perdu" being transferred to "fresh fields and pastures green," it has occurred to me that a point to which the eyes of telegraphers have for some time been turned with such interest as Washington, ought not to be unrepresented in your columns, even if the void has to be filled with the lucubrations of one so little accustomed, and, I may say, so unambitious to see himself in the mirror of print as I am.

I take it to be the desire, no less than the duty, of THE TELEGRAPHER to reflect impartially the views of those who support it, without committing itself to the advocacy or to the opposition of any scheme which may be proposed for the benefit of operators or of the people. From conversation with telegraphers here and elsewhere I am satisfied that there is considerable feeling among them in favor of a Postal Telegraph, which has not as yet found expression through their representative organ, but which ought not to be altogether ignored by it. If a better exponent of their views will appear I shall be glad to give him place; if not, I beg leave to present, in a few brief letters, what I understand to be the arguments on which they are based. Such of these arguments as relate to the benefits which it is claimed will result to the general public from the adoption of a Government Telegraph, are necessarily to a great extent embodied in the Report of the Postal Telegraph Committee, a "review" of which has just been commenced in your paper; and it will not, therefore, be out of place to advert to some statements in that review, which would scarcely have been made if the writer had been fully cognizant of the facts.

It is true that "the Committee, as such, has made no report." Its members are also members of other important committees, and legislative business at the close of the session was so much in arrears that sufficient time could not have been spared to discuss so important a question. Gen. Washburn's report was read to them at a special session, however, when they authorized it to be submitted, and agreed to ask for 10,000 extra copies, to be printed and circulated, with a view to eliciting public opinion as a basis for discussion of the measure at the next session of Congress. These copies were not all ordered, and the report has obtained a very limited circulation among telegraphers, so that I doubt if nine tenths of your readers will ever hear of it, except through your columns. So much the more important is it, then, that you should permit both sides to be heard.

It is not correct that the Committee was appointed for the purpose of reporting favorably upon some scheme of Postal Telegraph. The Speaker of the House, who appoints its Committees, is not in favor of the measure, and if he were, would not allow himself to be influenced by such a consideration. The Chairman, Mr. Washburn, is a gentleman of wealth and extensive landed property, who ranks deservedly high as a citizen and a legislator, and can have no possible motive but the public good in advocating a telegraph reform. Messrs. Woodward and Beck, the Democratic members, are from principle opposed to the concentration of power in the hands of the General Government; Judge Davis, of New York, is a friend of the Western Union Company, and Mr. Dawes, who is also the Chairman of the Appropriation Committee, has shown his zeal for the welfare of the public treasury during the session in a most remarkable manner. Mr. Palmer believes in Mr. Hubbard's scheme, and Mr. Lawrence, the remaining member, is non-committal.

This Committee, composed of some of the best members of the House, with a majority certainly not disposed to accept blindly the statements of the advocates of a Government Telegraph, invited the fullest information on the subject from all quarters. Not being a "Regular Committee," they did not request Messrs. Orton and Walker to come down from New York and write a report for them, to be telegraphed to the Associated Press. Mr. Orton, however, made a speech before them, which they publish *verbatim* with their report, together with letters from such widely known practical telegraphers as Col. Van Duzer, Charles M. Stebbins and G. S. Thompson, who all favor the plan of Mr. Washburn. They have also many other letters, which it was not thought necessary to publish.

It is worthy of note that Mr. Orton would not answer

the questions of the Committee in regard to the business of his Company, but preferred to make his own statement in his own way, picking his facts to conform to his arguments. I regret to see that the author of the "review" in THE TELEGRAPHER, in many instances, uses Mr. Orton's precise arguments, and repeats the statements of his speech, without stopping to inquire whether they are well grounded or not. There are two points to which this remark is peculiarly applicable. I refer to that portion of the review which speaks of the "forced contributions from communes," and of the "special credit for construction," as usual features of the Swiss telegraph administration.

I have before me the official reports of Switzerland for several years past, and have conversed on these two points with several Swiss gentlemen of high standing, both here and at home. In regard to the "forced contributions," the case is this:

Upon application of the citizens of some small village the Government decides to open an office. An operator is sent down, the necessary connections are made, and a tax of thirty centimes, or six cents, is assessed upon each inhabitant, for the first year only, the Bureau of Telegraphs paying the operator and all expenses. In this country the Western Union Company, when asked to open a small office, require the citizens to pay the operator's salary and expenses, not only for the first year but until the office becomes self-sustaining, and the poor wretch feels like a charity boy or a country school-master, obliged to "board round" to collect his tuition fees.

In regard to the "special credit," the following explanation will suffice: In 1867 the Swiss Bureau of Telegraphs was doing a safe and profitable business, giving the people tolerably cheap telegraphing, and more than paying all expenses, including the natural extension of lines. Desiring, however, like an enterprising merchant, to extend its business, it determined to reduce the rates from 20 to 10 cents throughout the Republic, and to open some 200 new offices. Fearing that the receipts under the reduced tariff might not at first be sufficient to pay for this extension, it borrowed from the Treasury \$100,000, the account of which loan is, of course, kept separate from that of ordinary receipts and expenditures. "Out of this sum," says the Swiss Report for 1869, "the sum of \$88,856 has been appropriated, but as not all of the work estimated for has been executed, the sum of but \$67,901 has been paid out up to the 31st of December, 1869. To the repayment of this loan have been applied the net profits of 1868, \$14,271, and of 1869, \$26,049—in all, \$40,320. The Administration of Telegraphs is therefore yet debtor to the Treasury for \$27,581, for which the Administration pays, according to enactment of July 17, 1867, an annual interest of four per cent." The extension of lines is nearly completed, no further appropriation will be necessary, and the debt, interest and all, will be paid in a few years from the net profits of the system. Looked at in this light the "special credit" seems to be part of a very ordinary business transaction. The Swiss Government, like the Western Union Company (see Mr. Orton's report for 1869), does not count the construction of new lines among its ordinary working expenses, but pays for it from net profits. To extend their lines the Western Union Company have passed two dividends in the last three years.

Those who have read the Committee's report will have seen that it is a great mistake to suppose, as the writer of the review (after Mr. Orton) asserts, that the profit in European countries is principally derived from "international and transit" business. This class of messages involves very nearly the same amount of labor as "internal" business, and the cost is very little more, considering the number of messages transmitted. In Switzerland, as shown by the report for 1869, the average cost of an inland message is not quite 11 cents, and the average cost of all messages, inland, international and transit, 14 cents. If the peoples of Europe all spoke the same language, and had the same freedom of commercial intercourse as those of our States, and had only one telegraph administration to support, as we would have, the number of telegrams between different countries would authorize the reduction of the international and transit rates to a par with the internal. Instead, therefore, of "ignoring the different conditions under which the telegraph is worked in this country and in Europe," Mr. Washburn claims, and justly, that our enterprising character, the identity of language and of business interests, as well as the greater comparative quickness of telegraphic and mail communication, would give us an immense advantage over European countries in the successful working of a Government telegraph.

A great deal is vaguely said about the "peculiar difficulties to be overcome" in building and maintaining lines in this country, which I should be glad to see more clearly explained. If we have more mountains and rivers to be crossed, more shade trees to be avoided, more cities to build expensive lines through, or fewer

railroad facilities than they have in Europe, the general impression must be altogether erroneous. It will not do to say, as Mr. Orton and Mr. Washburn's reviewer have done, "Take, for instance, the lines to California and the Pacific coast." These lines are altogether exceptional, and their maintenance would be an expense to the Government, or to anybody else who should attempt to run them at a cheap tariff, but their deficits would be made up on other routes.

There are but two or three other points in the review which need to be noticed:

1. The statement of Mr. Washburn that there has been little improvement in telegraphy in this country since inception is denied. With the exceptions of receiving in sound, and the employment of repeaters, it is substantially true. We have the same lines, the same insulation, the same instruments, and no better operators. Whatever improvement there may be in celerity and reliability of transmission, results from the consolidation of the companies under one administration, which would be perfected by the adoption of a postal telegraph.

2. It is stated that companies here are peculiarly responsible for errors, while the Government would not be. This means that the companies make their operators pay for all small losses, and go to law about the large ones, only paying them when obliged to. In Europe there are very few reclamations, and when just they are promptly paid by the Governments.

3. The review repeats Mr. Orton's statement that Great Britain is the only country where the telegraph is a part of the postal system. Mr. Cyrus W. Field also ought to know, says in his letter to Mr. Washburn appended to the report, that "the telegraph is operated in connection with the post-office in England, France, Germany, Russia, Austria, Italy, Belgium, Holland, Switzerland and many other countries, and I believe the public are better served than they would be if the lines were owned by competing companies."

4. The increase of business in Great Britain is asserted by Mr. Orton, and by the review, to the season of the year instead of to the reduction of rates. One of two things is true: Either the British system is doing a greater business under the new tariff than was done under the old, or the statements sent to this country by the Associated Press, about the derangement of the system consequent on the enormous increase of messages were not altogether correct. Mr. Scudamore, who is a gentleman entitled to belief until his statements are disproved, admits the temporary derangement of the system, but says the complaints have now almost ceased; and he further says, in a letter to Mr. Washburn, that they are taking 33 per cent. more money in Ireland under the shilling tariff than the combined telegraph companies took at a three shilling and four pence tariff. This increase is probably "due as much to the cheap tariff as to the season of the year."

The Telegraph in Central Illinois.

PEORIA, ILL., July 27th.

TO THE EDITOR OF THE TELEGRAPHER.

I HAVE been an attentive reader of THE TELEGRAPHER for several years, but have never seen any of its columns relating to Central Illinois; but as your columns appear to be open for correspondents among us, in fraternality, I will try to write at least one letter. Telegraphing is not very brisk in this city at present, notwithstanding there is so much excitement throughout the country on account of the European war. The Western Company have recently opened an office directly across the hall from the Western Union, and Mr. H. G. Skinner has been appointed Manager, and in affable manners are winning for the company considerable business. They have only one line at present, which will be a great advantage to them, as they will soon have a line in direct communication with St. Louis, passing through Pekin and Jacksonville. They will transfer all of their St. Louis business to the W. U. Co. here. I understand the W. U. Co. will, on the completion of the new Board of Trade building, remove there, or else open a branch office in the Board of Trade rooms during 'change hours, which will greatly accommodate the members, as the present Board of Trade rooms are several blocks from the telegraph office. More anon.

A Reply to Perdu's Strictures.

BALTIMORE, August 1st.

TO THE EDITOR OF THE TELEGRAPHER.

SOME time has elapsed since a communication appeared from me, but the correspondent "Perdu" has not appeared from Washington, has intentionally, and without just regard to truth, endeavored to cast odium upon the management of the B. and B. Baltimore office. I am compelled, through love of justice and honor to

ufficient space to controvert his remarks. When "Perdu" speaks so lightly of the manager of the mentioned office, he certainly does great injustice to a man who deserves great credit, and merits the applause of his superiors for his efficient course which he has pursued in bringing his department to such perfection. He has worked hard, labored faithfully and zealously, and rendered as much aid as any man connected with the company in gaining the reputation which said company enjoys. Such is his reputation among the patrons of the B. and O. here, and among the employés of the company here, one and all, denounce as unmitigatedly false "Perdu's" reflections. He no doubt is endeavoring to cause ill feeling, but his statements will not bear investigation.

The Franklin and P. and A. are doing pretty well, while the managers are indefatigable in pushing business and maintaining the reputation of their respective companies, notwithstanding "Perdu's" assertions to the contrary.

Business here has been dull—although brighter times are coming, and telegraphers will soon have plenty to do. Changes are not frequent in this vicinity.

The familiar face of Billy Barrett has gone, he having accepted a position with the P. and A. at Pittsburg.

Benny Johnson has taken his old position with W. U. here. D * * *

PERSONALS.

The present address of Mr. A. H. BROADGATE, formerly of the Pacific and Atlantic Telegraph Co.'s office at Warren, Ill., is wanted by the editor of THE TELEGRAPHER.

Mr. GEORGE R. SHULTZ, of Newark, N. J., who for the last three years has been employed as operator at Punta Rossa, Florida, for the International Ocean Telegraph Co., is at home on a vacation, but will soon return to Florida.

Mr. FRANK COX, operator on the Erie Railroad line at Suffern, N. Y., has resigned, and accepted a situation in the main office of the Western Union Co., at Pittsburg, Pa.

Mr. W. H. GAY has been appointed manager of the Atlantic and Pacific Company's Albany, N. Y., office.

Mr. C. L. GOODWIN, Superintendent of the First Division of the Atlantic and Pacific Telegraph Company, will hereafter have his headquarters at Buffalo, N. Y.

Mr. C. M. CHASE has been transferred from the Galesburg, Ill., to the Council Bluffs, Iowa, office of the Great Western Telegraph Company.

Mr. C. E. PAIST, operator, has been transferred from Kearney Station to Carter (W. T.) Station of the U. P. Railroad.

Mr. F. L. BICKFORD, formerly Manager of the Albany, N. Y., office of the A. & P. Telegraph Company, has been appointed manager of the Buffalo, N. Y., office of that company, in place of Mr. O. H. LINCOLN.

Mr. H. V. SHELLEY, for a number of years past day operator in the W. U. Co.'s Albany, N. Y., office, has been appointed night manager of the same office.

Mr. ED. R. WILLERTON, for a number of years past receiver for the W. U. Co., in their Albany, N. Y., office, has resigned his position, and accepted one in the general ticket office of the Albany and Susquehanna Railroad depot of the Delaware and Hudson Canal Co.

Mr. GEO. P. RILEY, book-keeper, Albany office, has been promoted to the position vacated by Mr. WILLERTON.

Mr. ALFRED F. CRISSEY, of Troy, takes the position vacated by Mr. RILEY.

Mr. VANCE BALDWIN has been transferred from the Delevau House, Albany, to the main W. U. office.

Mr. PATRICK CLARK, late assistant book-keeper in the Albany W. U. office, has been appointed to the charge of the Delevau House office.

Mr. GEO. HARRISON, late delivery clerk, has been appointed assistant book-keeper in Mr. CLARK's place.

Mr. WM. BOYD, of Albany, takes the position of delivery clerk vacated by Mr. HARRISON.

Sudden Death.

ARCHIE CRAIG, a well known telegraph operator, was found dead in his bed at Memphis, Tenn., on Wednesday morning last. A coroner's inquest returned a verdict of death by congestion of the brain. His remains were forwarded to Auburn, N. Y., for burial.

A New Telegraph Line.

The telegraph line between Lowell and Lawrence, Mass., has been completed. By this line direct telegraphic communication is established from Lowell to Lawrence, Haverhill, Exeter, Rye Beach and Portsmouth.

THE TELEGRAPH.

(By Cable.)

PROGRESS OF THE LAYING OF THE PANAMA AND WEST INDIA CABLE.

HAVANA, July 29th.—The Panama and West India Cable Company's steamer has passed the dangerous channel. Twenty-seven miles of cable have been laid up to this morning. The communication between the shore and the steamer Suffolk is perfect.

PARIS, August 1st.—The Public says that the French Government has contracted for a cable between Calais and some point in Jutland, Denmark, in order that the operations of the Baltic fleet may be reported to and directed from the Capitol.

The West India Telegraph Cable.

KINGSTON, Jamaica, July 9.—The telegraph fleet has at last sailed from here, convoyed by H. M. S. Vestal, U. S. S. Yantic, and a Spanish gunboat. As regards the length of time required for the submarine portion of this work, this cable is only exceeded by the British Indian and French Atlantic Cables; but as regards the difficulty attending the completion of the enterprise, it is probably, without any exception, the most difficult ever attempted. The mere fact that about 36 shore ends will be required, is sufficient proof of the amount of trouble to be anticipated.

The entire contract embraces about 3,153 nautical miles of submarine cable, and 350 miles of land line, and the whole system, when completed, will connect Cuba with Jamaica and Panama, and with the major portion of the West Indian Islands.

The first portion of the work connects Havana with the Port of Butabano by a land line; from thence a submarine cable will be laid to Cienfuegos, and from there to Santiago de Cuba. From this important place a cable will be laid to Morant Point, in Jamaica; from Morant Point two cables will be laid—one, the longest section of all, to Aspinwall, N. G.; the second will be to Porto Rico, and from thence to the South American Coast, touching at the principal islands. The following list gives the different sections: Batabano to Cienfuegos; Cienfuegos to Santiago de Cuba; Santiago de Cuba to Morant Point; Morant Point to Aspinwall; Morant Point to Porto Rico; Porto Rico to St. Thomas; St. Thomas to St. Croix; St. Croix to St. Christopher; St. Christopher to Antigua; Antigua to Guadalupe; Guadalupe to Dominica; Dominica to Martinique; Martinique to St. Lucia; St. Lucia to St. Vincent; St. Vincent to Barbadoes; St. Vincent to Grenada; Grenada to Trinidad; Trinidad to Cape Nassau.

The steamship Dacia and five other vessels are employed in the work. The Dacia has been fitted up as the vessel from which all the work will be done, the other vessels being simply employed as carriers. Her machinery is of the strongest and most massive form possible to conceive, and the picking-up machinery is very strong, and is probably heavier than that used on the Great Eastern for the Atlantic Cable. The drum is overhanging, driven by internal gearing. The steamer Suffolk will lay the shore ends, and has been fitted up for that purpose.

The cable for the work is divided into deep sea cable, 2,955 nautical miles; intermediate, 130 miles, and shore ends, 68 miles; total, 3,153 nautical miles.

The success of the work will reflect great credit upon Sir Charles Bright, who, as engineer of the Companies, organized the whole affair.—*Correspondence N. Y. Tribune.*

Telegraphing on Long Circuits.

We alluded lately to telegraphing over great distances in connection with the Indo-European Telegraph; this has been rivalled by the great telegraphic feat accomplished at the late *soiree* given by Mr. Pender in honor of the successful completion of the Falmouth, Gibraltar and Malta cable, bringing India into submarine communication with England. Telegraphing was rapidly maintained throughout the evening with the important points on the route, and also with the United States, the instrument used being Sir William Thomson's recorder (a description of which appeared some time since in our columns). The communication was as successful as rapid, but was, we believe, accomplished by various transmissions along the route by hand. In the account we referred to of the Indo-European, the signals were automatically transmitted, so that to all intents and purposes the communication was direct; the distance then accomplished was from London to Teheran, about 3,900 miles. Some days later messages were sent to and from Bushire, a distance of 800 miles further, and, subsequently, signals were exchanged direct between London

and Kurrachee, a total distance of nearly 6,000 miles. This is without question the largest telegraphic circuit yet established.—*Mechanics' Magazine.*

Sad Accident.

ON Tuesday, of last week, Mr. Wm. Rice, of this city, well known as a telegraph constructor, was instantly killed at Cedarville, Conn., under the following circumstances: Mr. Rice had charge of the distribution of poles for a new line which is being built on the Connecticut Air Line Railroad, and, while throwing off poles from a construction train, was accidentally thrown from a car, and six cars passed over him, horribly mauling and instantly killing him.

Slow Telegraphing.

WHY is it that it takes so long to telegraph from here to Danbury? The answer is, that despatches have to be sent to New York, and they there await the pleasure of the New York operator, who sends from there to Danbury when "he gets good and ready." Nice, ain't it? The two county seats are farther separated than either is from Chicago or Washington! Nice, ain't it? Moral: If you desire to send a message to Danbury, write it in a clear, bold hand, and walk up there with it! You will save hours of time thereby.—*Bridgeport (Conn.) Standard.*

New Patents.

For the week ending July 26, and each bearing that date.

No. 106,625.—TELEGRAPH INSULATOR. William W. Baldwin, Cleveland, Ohio.

Claim.—The metal shells A and B, when constructed, combined and arranged with the insulating material C, substantially in the manner shown, and for the purpose set forth.

No. 105,653.—RELAY MAGNET. Ludovic Charles Adrien Joseph Guyot D'Arlincourt, Paris, France.

Claim.—The pallet c, provided with the insulated portion e, f, substantially as and for the purpose herein shown and described.

No. 105,656.—CRAMP HOOK FOR TELEGRAPHIC WIRE INSULATORS. William H. Dechant, Philadelphia, Pa., assignor to David Brooks, same place.

Claim.—The improved cramp hook for telegraph wire insulators, constructed as described.

No. 105,663.—ELECTRO-MAGNETIC MOTOR. Louis Finger, Cambridge, Mass.

Claim.—1. The described arrangement of rods B¹ B² B³ B⁴ B⁵, with relation to rods d' d' d', by means of which, when two or more of the latter cover the ends of one or more of the former, the remaining two of the latter cover spaces between two others of the former, substantially as described.

2. The motor described, consisting substantially of rods B¹ B² B³ B⁴ B⁵, and d' d' d', and commutators E I, all arranged and operating substantially as set forth.

3. The form of ends of rods B¹ B² B³, &c., and d' d' shown in fig. 6, substantially as described.

No. 105,697.—COMPOUND SWITCH FOR ELECTRIC BATTERIES. Jerome Kidder, New York.

Claim.—1. A compound switch, composed of two switches, A and B, arranged to work independently of and insulated, the one from the other, from or around a common centre, on or over a circuit breaking and closing surface, substantially as specified.

2. The construction and arrangement, relatively to each other, of the independent switches A and B, whereby said switches, in working from or around a common centre, are free to play, the one within or through the other, essentially as described.

3. The combination and arrangement of the conductors G, which connect with the cups, the intervening insulators I, and the rollers E and F, of the contact surfaces of the switches A and B, substantially as and for the purpose specified.

For the week ending August 2, and bearing that date.

No. 105,975.—CUT-OFF FOR RELAYS AND OTHER ELECTRO-MAGNETIC INSTRUMENTS. Frederick M. Perry, Barton, Vt.

Claim.—The combination of the lever B, platinum point C, clamp E, and clamping screw F, when arranged for application to the plate A and to the armature D, all substantially as specified.

Recent British Patents.

Specifications.

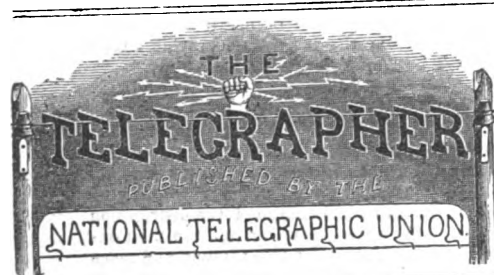
No. 3,720.—E. S. HEDDER, Milburn, U. S., Electro-Magnetic Circuits. Dated 16th December, 1869.

This relates to improvements in relay instruments, which break and make electro-magnetic circuits when another electro-magnetic circuit is broken or closed. Such instruments are usually employed in connection with long circuits, reaching from one place to another, in such manner that when the long circuit is opened or closed it shall act upon the relay instrument, so that the latter shall open and close a short or local circuit at the locality where a telegraphic message is to be received.

SPECIFICATION.

No. 3587.—W. A. MARSHALL, Channbury. "Electric Telegraph Cables." Dated 11th December, 1869.

The process of insulating and protecting the wire is as follows: The cotton or other fibrous non-conducting material with which the conducting wire or wires is to be covered is first dried, and wound loosely on bobbins, and then boiled in a vessel containing paraffin wax, until the whole of the cotton or other fibres are thoroughly permeated by the wax. The waxed cords or strands are then preferably rewound on other bobbins, previous to which they are made to pass over the flame of a spirit lamp or lamps, or gas jet or jets, with the object of singeing off any loose fibres and smoothing the surface of the strands.



SATURDAY, AUGUST 6, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D.C.

Vice-President.....A. L. LEWIS....New York.

Treasurer.....A. L. WHIFFLE....Box 39 P. O., Albany, N. Y.

Recording Sec.....W. W. BURHANS....Box 6010 P. O., New York.

Corres. Sec.....E. L. POPE....Box 6010 P. O., N. Y.

THE SITUATION.

WHEN the strike of the operators of the Western Union Telegraph Company, in January last, terminated adversely to the strikers, it was generally supposed by all parties that thenceforth the latter were at the mercy of the companies, and must submit to such terms and conditions as they should see fit to impose. The situation then was more discouraging for telegraph employes than ever before, and many voluntarily abandoned the business rather than submit to the conditions imposed upon those who were restored to the places from which they had temporarily retired. Those whose necessities compelled submission were lectured, and required to sign various documents, pledging themselves never again to attempt any resistance to the exactions of the company, &c.; salaries were largely reduced; THE TELEGRAPHER, as the independent organ of the telegraphic profession, was proscribed, and it was believed that all telegraph employes were henceforth and forever to yield uncomplaining submission, and bow in thankfulness and gratitude to the hand that smote them. It was boastfully proclaimed by Western Union little great men that the days of THE TELEGRAPHER were numbered, and that in a few weeks, at most, it would cease to annoy and harass those who, by virtue of a little brief authority, sought to grind and oppress their subordinates. It should be stated, as a matter of justice, however, that on the Southern Division of the Western Union lines a more manly and sensible course was adopted, and the strikers were treated like men, and not as criminals, when they returned to work.

All this was very fine for the little great men aforesaid, and they thought the day of jubilee had come, sure enough. A few short months has, however, completely changed the situation, and telegraph operators can again assert their independence and manliness. The very companies that were then so jubilant and arrogant now find it difficult to obtain competent operators to fill important situations. As was before stated, many good operators, and generally the best, retired from the profession in disgust, and found other employment. Others were proscribed by the Western Union Company, and compelled to accept inferior positions with other companies for the time being; and the extension of telegraphic facilities, which has been steadily going on, has necessitated the employment of additional force, until now it has become difficult to procure the services of first class operators—and inducements are offered such to leave situations with one company to engage with another. Even the strikers, who were declared by the Western Union managers as utterly beyond any future restoration, are now given to understand that their offences will be condoned, and they received into fellowship again, if they so desire, and will make application.

We congratulate the telegraphic fraternity upon this change in the situation. While we do not desire that there should be a scarcity of good operators, we are glad that this pinch has come now, for it will learn some arrogant telegraph managers a lesson which will prove advantageous to them in many respects. All attempts to educate operators in telegraph colleges and institutes (so-called) have proved failures. Even the Western Union free telegraph school, at the Cooper Institute, has practically proved a failure, so far as producing any number of competent operators, either male or female, is concerned. Operators must be educated practically in the offices, and this will always limit the supply, except occasionally for brief seasons, to the requirements of the service.

We state these facts in the interest of the profession, that all may know the exact situation at the present time, and govern themselves accordingly. We do not advise any retaliatory measures on the part of operators, but only that they shall, individually, insist upon and secure what belongs to them. First class situations should secure first class salaries, and all telegraph employes are entitled to be treated as free men and women, and not as serfs. Any impertinent dictation, as to what papers they should countenance or discountenance, should be resisted in such a manner as to prevent its repetition. Any attempt at improper coercion in any direction should be at once quietly but firmly resisted. There is no necessity for Associations or Leagues to accomplish these things, and we do not, at this time, advise the attempt to form any such. Let each employe decide for himself or herself what is due, and insist upon its being accorded. With such a general co-operation everything that is proper and desirable may be accomplished. While THE TELEGRAPHER lives the profession can never be entirely at the mercy of telegraph managers, and so long as those it is designed to serve continue to support it, as they have heretofore done, it will continue to live. All attempts of the small souled telegraphic tyrants, thus far, to destroy it, have proved abortive. It will soon enter upon its SEVENTH volume, and, secure in the approbation and support of the profession generally, we expect that many volumes will yet be added to the six already published.

Alleged Attempt to Steal News Reports.

A VERY bitter and personal contest is going on in California between the Western Union and Atlantic and Pacific Telegraph Companies, and the Associated Press and American Press Association. On Wednesday night of last week Mr. Van Valkenburg, of the Sacramento office of the Atlantic and Pacific Company, it is alleged, was detected in the act of surreptitiously copying the Associated Press despatches, as they were being received on the Western Union line. This is denied by that gentleman and his friends, however, who claim that his presence in the neighborhood of the Western Union office was accidental. The statements are so contradictory that it is impossible to say what the facts may be. Our California correspondents will no doubt furnish us the facts in the case.

The Guattari Atmospheric Telegraph.

IN THE TELEGRAPHER of last week we republished from the London *Telegraph* a description of an atmospheric telegraph designed to rival or supplement the electric, the invention of Sig. GUATTARI, an Italian. From the description we should judge that Sig. GUATTARI is not the original discoverer of this invention. We recollect a similar invention, made by Mr. W. O. Lewis, of this city, in 1861, or previous to that time. In April, of that year, Mr. LEWIS submitted a working model of his invention to President Lincoln, and Secretary Wells, of the Navy Department, at Washington.

Mr. A. B. TALCOTT, now of the *National Republican* newspaper, of Washington, publishes in that paper the following in reference to that exhibition:

"The writer of this was present in 1863, when Mr. W. O. Lewis, of New York City, submitted to Secretary Wells and President Lincoln, in the private room of the latter, a working model of precisely the same instrument as that now brought out by Sig. Guattari with such a flourish of trumpets.

Mr. Lewis' object in exhibiting it at that time was to secure its introduction on board our war vessels, but the Navy Department was so beset by inventors of all kinds of apparatus that the most meritorious inventions shared the fate of the most worthless, and although the President and Secretary expressed themselves pleased with the invention, nothing was ever done towards its practical application.

A similar device, worked by steam and operated upon large steam whistles, to be used in communicating at night and in fogs, was also exhibited at the same time, and met with the same fate."

The Scientific Journal.

ALL persons interested in the study of electrical science will find it to their advantage to subscribe to the above publication. It is not only a valuable record of general scientific and practical information of every description, but is one of the best authorities in this country on electrical and telegraphic subjects—its translations of articles from French and German periodicals being a feature of especial importance. Among the numerous articles of this kind which have appeared in its columns within a few months we may mention the report of the French Government Commission on Galvanic Batteries, and the report of the International Committee upon the units of resistance. Recently, also, it has given an excellent series of articles on the Art of Telegraphing, by Mr. POTTER, of Philadelphia.

Its enterprise in these matters deserves cordial recognition, and we trust electricians and telegraphers will give it a liberal support.

It is published weekly, at \$3.00 per annum, by d'Epineuil & Dimpfel, 411 Walnut street, Philadelphia.

Literature.

The Telegraphic Instructor—A Rudimentary Treatise on the Art of Telegraphing. By ARTHUR POTTER. Philadelphia: Flemming, Potter & Co. 1870.

THIS unpretending little pamphlet is an addition of some value to the list of works of the kind now in existence. Being intended solely for beginners, it, of course, does not attempt to go much beyond first principles, but these are laid down in an exceedingly clear and thorough manner. The system employed for teaching the alphabet, and the proper formation of the dashes, dots and spaces which compose the telegraphic characters, is different from those laid down in existing works, and on the whole seems to possess some decided merits.

A decidedly novel and convenient instrument, designed especially for learners, is figured and described in the work, which will be found very convenient for use on short Morse lines, as it is very simple in form and therefore inexpensive.

Copies of the work can be obtained of the publishers, Messrs. Flemming, Potter & Co., N. W. corner Chestnut and Second streets, Philadelphia, Pa.

Extension of Press Facilities.

J. W. SIMONTON, General Agent of the Associated Press, before his recent return from Europe, closed contracts for five years' alliance with the Reuter Telegraph Co. of London, the Continental Telegraph Co. of Berlin, and the Havas, Bullier & Co. Agency of Paris. Under this arrangement the Associated Press obtains exclusive use in America of the news of the three European agencies named, and the services of all their subordinate agents in every part of Europe, Asia (including India and China), Africa, Australia, and the islands of the Pacific. On the other hand, the Associated Press will place its exclusive services in America at the disposal of the European parties to the contract, who control the only organizations of any importance for the collection of news in the Old World.

THE British Post-office is about to have manufactured a large six wire cable, to be laid between Holyhead and Dublin; although designed by a different person, it is identical with the new cable for the Submarine Telegraph Company, to be laid from Beachy Head to Cape Antifer, near Havre.

FOR PRIVATE TELEGRAPH LINES.

EDISON & ANDERS' MAGNETOGRAPH.

A simple and cheap Alphabetical Dial Instrument, for private lines. Requires no batteries. A pair of these instruments for sale by

F. L. POPE,
80 BROADWAY, Room 5.

ELECTRIC TELEGRAPH WORKS,

N. W. CORNER SECOND & CHESTNUT STREETS,

PHILADELPHIA,

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MANUFACTURERS OF EVERY DESCRIPTION OF

Telegraphic Instruments,

Electrical Apparatus

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RAILWAY SIGNALS.

BRADLEY'S PATENT HELICES

FOR

ELECTRO MAGNETS

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These Helices are composed of **NAKED COPPER WIRE**, carefully wound by **ACCURATE MACHINERY**, so that the convolutions are separated by a uniform space of only

ONE EIGHT HUNDREDTH OF AN INCH!

A conducting wire of any given length and section, wound in this manner, will allow a much

GREATER NUMBER OF CONVOLUTIONS

around the soft iron core than when covered with silk in the usual manner, thereby

INCREASING the **MAGNETIC EFFECT** more than 20 per cent.,

without adding to the resistance, or to the battery power required.

These improved Helices have now been extensively used in this country more than nine years, and their great superiority over all others has been **FULLY DEMONSTRATED**.

In the manufacture of the Helices none but

PURE COPPER WIRE

of the highest conductivity is employed, all the wire used being **CAREFULLY AND THOROUGHLY TESTED**.

In response to numerous requests, the undersigned has now made arrangements to supply Manufacturers and others with these **Celebrated Helices** in any quantity, at short notice and upon reasonable terms.

COMPLETE ELECTRO-MAGNETS,

with cores of pure soft iron of superior quality, or **HELICES** and **SPOOLS** of any dimensions, and of any **REQUIRED RESISTANCE**, will be furnished to order.

Also, constantly on hand and for sale

BRADLEY'S**Improved Telegraph Instruments.**

Attention is respectfully called to the following

PRICE LIST.

Button Repeaters.....	\$6 00
Relays, with Helices in bone rubber cylinders (very fine).....	18 50
Small Box Relays.....	16 00
Medium Box Relays.....	17 00
Main Sounders, same as the above, with heavy armature levers, without local connections, 75 cents less.	
Pocket Relays, with all the adjustments of the above, and good Lever Keys.....	22 00
Excellent Registers.....	40 00
Pony Sounders.....	6 75
Keys.....	6 50
Lightning Arrester, with cut-out and switches for grounding either wire.....	6 00

All other appliances made to order. Extra Spools, for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old Spools taken at the price of new wire by the pound. Goods sent to all parts of the continent with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post-office order, in which case he will make no charge for package.

He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

10 per cent. discount on bills of \$20 and over.

DR. L. BRADLEY,

No. 7 Exchange Place, Jersey City, N. J.

GALVANIZED TELEGRAPH WIRE.

LONG LENGTHS!! FEW JOINTS!!

SUPERIOR QUALITY! LOW PRICES!

The Wire manufactured by Messrs. **RICHARD JOHNSON & NEPHEW**, Manchester, England, has attained its celebrity on this Continent mostly from its long lengths—a joint occurring only on the average once in about 1,200 feet. The advantage of this feature will be apparent to all telegraph constructors. It is accomplished by a process peculiar to Messrs. JOHNSON'S establishment, and they are the only manufacturers in England who can do it.

L. G. TILLOTSON & CO.,

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GEO. W. SHAWK.

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SHAWK & FOOTE,**Electrical Instrument Manufacturers,**

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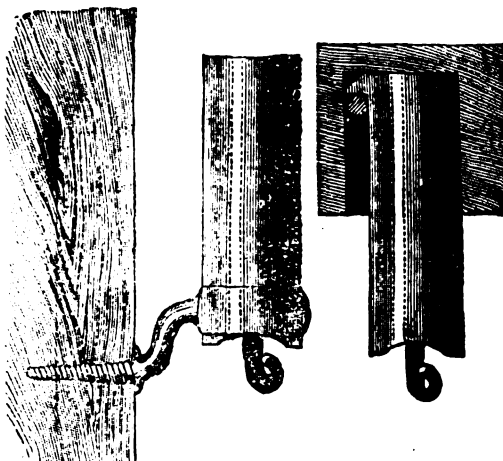
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REPAIRING NEATLY DONE.

BROOKS' PATENT PARAFFINE INSULATOR.

FOR SIDE OF POLE.

FOR CROSS-ARM.

**L. G. TILLOTSON & CO.,**
NEW YORK,

AND

BLISS, TILLOTSON & CO.,
CHICAGO,

SOLE AGENTS FOR THE UNITED STATES.

The improvements introduced in the construction of this Insulator make it, beyond question, the **BEST**.

Its insulating properties exceed those of the glass a hundred thousand fold.

In strength and durability it has no equal.

They are warranted not to break or part.

They are made with a screw shank, to fasten into the pole, price 38 cents each, or without the screw, for cross-arms, 30 cents each.

Pamphlets furnished, with full description.

A stock of the Insulators always on hand at our stores.

THE **BROOKS' INSULATOR**, with the **PATENT COMPOUND WIRE** and our **PATENT MAGNETS**, constitute the best Telegraph Lines ever constructed.

L. G. TILLOTSON & CO.,

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247 SO. WATER ST., CHICAGO.

Sole Agents of American Compound Telegraph Wire Company.

Importers of English Galvanized Wire; Manufacturers and Dealers in every description of Telegraph Machinery and Supplies.

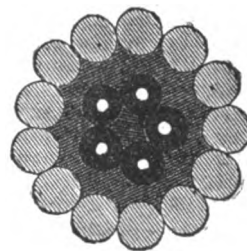
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SUBMARINE TELEGRAPH CABLES,

INSULATED WIRES, for

TELEGRAPH AND ELECTRIC USE, and for

BLASTING AND MINING PURPOSES,

in every variety desired.

As an Insulation for Telegraph Cables and Electric Conductors **GUTTA-PERCHA** has been universally adopted by all scientific and practical Electricians and Manufacturers of Telegraph Cables and Wires in this country and Europe, and has sustained, with increasing confidence in its superiority, the practical test of over twenty years' general use.

The PROPRIETOR would say, to all parties desiring

SUBMARINE TELEGRAPH CABLES,

that he will guarantee to make and deliver at his Factory any style of Cable, Insulated with Gutta-Percha, as low as they can import Cable of the same style and quality.

ORDERS RECEIVED AT THE FACTORY.**Messrs. L. G. TILLOTSON & CO.,**

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BLISS, TILLOTSON & CO.,

247 SO. WATER ST. CHICAGO, ILL.,

have been appointed by me **GENERAL AGENTS** for the sale of any Telegraph Cable or Wire manufactured at the Works in New York, at Factory Prices, delivered in New York.

JOHN THORNLEY, 503 Chestnut St., Philadelphia,

has been appointed Agent for the sale of any and all goods manufactured by me, at Factory Prices, delivered in New York.

SPECIAL AGENTS IN NEW YORK,

for sale of all goods (except Telegraph Articles), are

H. G. NORTON & CO., 26 Park Place,**RUBBER CLOTHING CO., 347 Broadway,****A. D. & C. A. HODGMAN, 201 Broadway.****SAMUEL C. BISHOP.**

OFFICE AT FACTORY.

CHESTER, PARTRICK & CO.,
TELEGRAPHIC
AND
ELECTRICAL ENGINEERS,
CONTRACTORS, etc.,

38 South Fourth Street Philadelphia,

Manufacturers of, and dealers in every variety of
TELEGRAPHIC, ELECTRIC, AND PHILOSOPHICAL APPA-
RATUS, BATTERIES, WIRE, ACIDS, INSULATORS,
MEDICAL INSTRUMENTS, AND OTHER SUPPLIES.
Also, Contractors for the construction, re-construction, and
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TELEGRAPH LINES, SIMPLE BURGLAR ALARMS, FOR
PRIVATE RESIDENCES, AND BURGLAR ALARMS
WITH "TELL-TALE CLOCK," AND OTHER
APPARATUS FOR BANKS AND
PUBLIC BUILDINGS.

Among other Telegraphic Supplies constantly kept on hand,
they are prepared to furnish promptly the following novel
articles:

KERITE (OR HORN COVERED) COPPER OR COMPOUND
WIRE OR CABLES,
COVERED COMPOUND AIR LINE WIRE,
BLASTING APPARATUS, CARTRIDGES, BATTERIES, &c., &c.
CALCIUM LIGHTING APPARATUS,
MEDICAL BATTERIES,
INDUCED AND DIRECT CURRENTS;
ELECTRO-PLATERS' BATTERIES AND MATERIALS,
ELECTRO GONGS, OF ANY DESIRED SIZE OR WEIGHT,
ALARM APPARATUS.
PATENT APPARATUS FOR THE MANUFACTURE OF NITRO-
GLYCERINE, ELECTRICAL CLOCK WORK,
&c., &c., &c.

They guarantee to give satisfaction to all who favor them with
orders, in the promptness of execution and in the quality of
articles supplied.

Also, have on hand and for sale,
MODERN PRACTICE OF THE ELECTRIC TELEGRAPH.
BY
F. L. POPE.

**AMERICAN
COMPOUND TELEGRAPH LINE WIRE.**

COPPER FOR CONDUCTIVITY.

STEEL FOR STRENGTH.

The superiority of the COMPOUND TELEGRAPH WIRE,
compared with iron, consists in its LIGHTNESS, reducing by over
fifty per cent. the number of poles and insulators required;

Relative TENSILE STRENGTH, homogeneity and elasticity—de-
creasing the liability to breakage from cold weather, sleet, etc.;

CONDUCTIVITY—insuring great improvement in the working of
lines in any condition of the weather;

And in its DURABILITY, which greatly exceeds that of the best
galvanized iron wire;

Altogether resulting in a very great reduction in the cost of
maintaining and working telegraph lines, while, at the same
time, insuring

EFFICIENCY AND RELIABILITY.

Address—

American Compound Telegraph Wire Co.,

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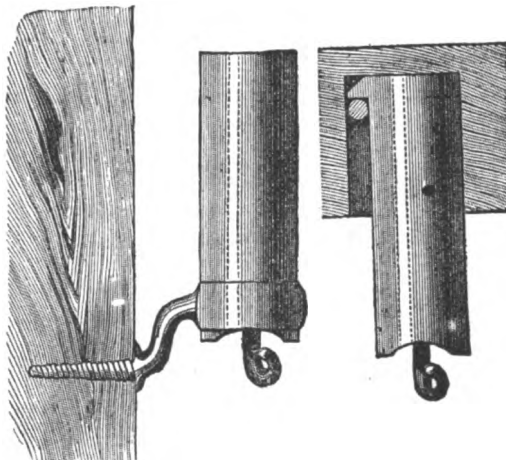
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ENGINEER TO THE
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104 Centre Street, N. Y.

This system of Fire Alarm Telegraph, with a central office, or upon the

AUTOMATIC PLAN,

is now in operation in the following cities, to which reference is made for evidence of its great superiority and value, and UNIFORM reliability:

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BUFFALO,
BALTIMORE,
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PITTSBURG,
LOUISVILLE,
ALLEGHENY,
MONTREAL,
QUEBEC,PORTLAND,
ST. JOHN, N. B.,
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TROY,
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are a Combination of Circuits, the Automatic Signal Boxes, Electro-Mechanical Bell and Gong Strikers.

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is covered by some twenty patents. Very early after its introduction into Boston, GAMEWELL & Co. purchased the original patents of FARMER & CHANNING, and during the past fifteen years have spared no expense or pains to improve and perfect this system.

Any information desired in regard to the above system will be cheerfully and promptly furnished upon application at the office.

A pamphlet, setting forth more fully its advantages and superiority, has been printed, and will be supplied to Municipal Authorities and others interested in Fire Alarm and Police Telegraphy, upon application as above.

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SUBMARINE CABLE.

A. G. DAY'S

KERITE,

OR

COMPOUND RUBBER COVERED WIRE

SUBTERRANEAN & AERIAL WIRES,

OF THE

HIGHEST INSULATION.

CHARLES T. & J. N. CHESTER,

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EXCLUSIVE AGENTS

offer for sale, as TELEGRAPH and ELECTRIC CONDUCTORS, Wires protected by the BEST INSULATOR and STRONGEST RESISTANT TO CHEMICAL ACTION and ATMOSPHERIC INFLUENCE.

After the experience of several years in the use of KERITE for purposes of insulation, we have concluded to adopt it as the very best substance for wire covering, not only for use of offices but for SUBTERRANEAN, SUBMARINE and AERIAL LINES. We have used it unprotected for years under ground, and exposed to the most injurious atmospheric influences—to heat, cold and moisture—and have yet to learn its failure, when other ordinary insulating substances would have been rapidly destroyed. UNDER WATER it has retained an electrical charge for many hours, thus ranking it in the HIGHEST GRADE of NON-CONDUCTORS.

We have, therefore, made arrangements not only to secure THE EXCLUSIVE AGENCY for its sale, for the purposes for which we have already sold it so largely, but to furnish complete

IRON-CLAD CABLES,

of the usual size, with KERITE COVER, believing that it will exceed, in insulation for submarine purposes, ANYTHING HITHERTO MANUFACTURED.

We shall be happy to furnish estimates for any amount and size of cable, which will be found to compete with any other construction, both in quality and price.

In corroboration of our statements we append extracts from reports of those who have exposed it to the severest practical tests.

From Prof. SILLIMAN, of Yale College, Nov. 10, 1868.

"I am satisfied, as the result of my own researches, that ozone is by far the most fatal of atmospheric influences. I have submitted portions of KERITE to the action of a highly ozonized air for a sufficient length of time to prove them, and at the same time have exposed the best English Gutta-Percha Covered Cable to the same tests, with the following result: After long experience KERITE resists perfectly! The best English Gutta-Percha Cable was speedily destroyed. A few days' exposure to ozone would produce more effect than many years in a normal atmosphere, exposed to carbonic disulphide, nitric acid, sulphuric acid, sulphuric dioxide, nitric peroxide, chlorine gas and alkaline hydrates. Gutta-Percha is immediately dissolved in carbonic disulphide, and powerfully acted upon by alkaline hydrates. Some samples of KERITE resist the action of the former in a surprising manner, and are completely unaffected by the latter."

"NEW YORK, May 14, 1870.

"In nearly two years since the foregoing was written I have made a considerable number of experiments upon the KERITE Compound of A. G. DAY, all of which tend to confirm former results; while the practical test of the continued use of electrical conductors covered with it, and the growing favor with which they are received by electricians, offers the best guarantee of its permanent value."

"B. SILLIMAN."

From MOSSE G. FARMER, of Boston, Mass.

"I have tested 195 feet of this wire, and found it a better insulator than Gutta-Percha."

"The instrument used would have shown a current through 300,000 miles of Telegraph wire. The 195 feet showed no leakage in water. The KERITE insulated wire withstands atmospheric agencies wonderfully, and will last for years when exposed to the atmosphere; likewise, when buried in the earth, there is no reason to apprehend decay. It is a well known fact that Gutta-Percha deteriorates very rapidly when exposed to atmospheric influences, and therefore cannot be advantageously used for the covering of wire for out-door exposure unless buried in permanent moisture."

From Mr. E. A. CALAHAN, Supt. Gold and Stock
Telegraph Co., May 14, 1870.

"Under all circumstances it has given me the fullest satisfaction. The peculiar nature of our business renders it necessary for us to use the most perfectly insulated wire. I have tried several kinds of insulated wire, but have been compelled to take down and substitute KERITE instead. Wire strung a year since is as good as the first day put up. Have tested it after three days' constant rain and could not find one degree of escape. We use it in gas pipes, and sometimes placed near furnaces subject to very high temperature. I have not been able to detect the slightest change from its original condition."

"We have exposed it to the extreme cold and heat of the past two years and a half, strung over the roofs of buildings, which we consider the best test of its indestructible and insulating qualities."

Whole No. 213.

But your jokes are nothing to some of your "sells."

JOHN STEPHEN.

Now, if the length of the loop is say 100 miles, the length of each wire would be 50 miles; therefore, $\frac{1}{2}$ of 100 miles = $\frac{1}{2}$ of 100 = 50 miles, which is the distance of the fault. To prove the correctness of the result take the resistance of the portion of the loop on the opposite side of the fault, in the same manner as above, which

would be 1200 olms in case the fault offered absolutely no resistance. If the observed resistance should be greater than this half the surplus is the actual resistance of the fault, for which due allowance should be made in the calculation.

D. BROOKS, JR.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

Further Arguments in Favor of the Postal Telegraph.

WASHINGTON, D. C., August 8th.

TO THE EDITOR OF THE TELEGRAPHER.

FOR a clear understanding of the merits of the controversy between the advocates and the opponents of a Postal Telegraph system, it is essential that each and every point of difference should be stated as distinctly as possible.

The review of Mr. Washburn's report in THE TELEGRAPHER, as well as Mr. Orton, in his speech before the Committee, greatly confuses what would otherwise be a very simple discussion, by bringing in wholly irrelevant matter, and by mixing up parts of a subject which have, to say the least, a very remote connection with each other, as if for the sole purpose of proving the writer's assertion that figures *will* lie, in spite of his earnest efforts to keep them in the paths of truth and rectitude. Now I think there is no part of the argument on either side which cannot be perfectly understood by every one of your readers, if it is properly and plainly presented, and I do not believe that figures will lie, unless compelled to by torture and mutilation. I will back a column of them any day for veracity against two columns of Associated Press despatches on the war in Europe, or any subject whatever, but I want the column to be unbroken and complete, not garbled and fragmentary.

Let us see if we cannot avoid what the lawyers call set-offs and dilatory pleading, and come at once to an issue.

In treating of a Government Telegraph, with reference to its probable financial success, there are four things to be considered and compared—the tariff, the amount of business, the expenses and the receipts. The review in THE TELEGRAPHER commences by admitting the truth of Mr. Washburn's statement that reduction in tariff will increase the business, but he says there will be a "more than proportional increase in expenses." Recollect, this has nothing at all to do with the reduction of tariff; the proposition is that an increase of business will bring a more than proportional increase of expenses. And how does he support that proposition? why, by showing that a reduction of tariff, although followed by an increase of business, is *not* followed by an increase of receipts or of net profits. This is a point most willingly conceded, in fact it has never been disputed; but nothing can be plainer than that in telegraphing, or in anything else, an increase of business is *not*, and cannot be followed by a *proportionate* increase of expenses. If it were, there would be no motive for the extension of lines or the enlargement of facilities.

There are no available statistics on these points in this country, except Mr. Orton's assertion before the Committee that the late reduction of tariff by his company was followed by a falling off in receipts. He does not say that the business had greatly increased—probably it had not—up to the time that he made his speech; nor does he claim that their dividends had been passed on that account; in fact, he more than intimates that they did not pay any dividend this year because they had spent all their *net profits* in the construction of new lines.

The following table is taken from the report of the Swiss Administration of Telegraphs, for 1869, and affords a fair comparison of business with expenses, under a heavy reduction of tariff in Switzerland, and, indeed, in most European countries:

	1-66.	1-69.	Reduction.	Percentage.
Internal Tariff.....	20 cents.	10 cents.	10 cents.	50
Messages—Internal.....	\$383,151	\$951,337	\$568,178	148
International.....	223,618	308,295	85,287	38
Transit.....	62,140	109,182	47,042	76
Total Messages.....	\$668,917	\$1,369,424	\$700,507	104
Receipts from Messages....	\$136,874	\$197,532	\$60,658	44
Other Sources.....	8,628	13,138	4,510	52
Total.....	\$145,522	\$210,670	\$65,148	44
Expenses.....	\$137,478	\$184,621	\$47,143	34

Thus we see that a reduction of tariff of 50 per cent. caused an increase of business of 104 per cent., even counting international and transit messages, while the expenses were only increased 34 per cent., or less than

the percentage of increase on gross receipts. These figures, it strikes me, are pretty conclusive, so far as the assertion that expenses increase proportionately with the business is concerned.

The above table will also uphold the assertion in my letter of last week, that European countries like Switzerland do not rely upon international and transit business to support their cheap internal tariffs. Take away the international and transit messages for 1869, and the expense of their transmission, and an addition of two cents to the internal tariff would keep the system self-sustaining. If, on the contrary, the international and transit messages increased as fast as the internal—as they would if France, Italy and Germany spoke the same language, and were under the same government as Switzerland—who can doubt that the tariff on these messages could be as advantageously reduced?

The points in the continued "review" in last week's TELEGRAPHER which have not been already answered in this or in my preceding letter, are neither numerous nor important, but they may be briefly touched upon.

In the first place, Gen. Washburn does not make a "strong point" on the similarity of argument between the pamphlets of Mr. Grimston and Mr. Orton, but only compares them, to show that what is now advanced against a Postal Telegraph in this country had been before advanced in England, and had failed to convince such an intelligent body of men as the British Parliament.

That such interference with and censorship of the Telegraph as is exercised by the French Government would ever be attempted in this country, nobody who has the slightest notion of the difference between the two forms of government could for a moment suppose. In times of great excitement, however, the Government has an undoubted right, and has exercised it, to seize upon telegraphs as upon railroads or other private property. I think Congress exceeded its authority in taking messages from the Washington office for the impeachment investigation. There are those, undoubtedly, who believe that despatches whose contents are of a nature to affect the security of the State or the laws of the land, should be subject to Government seizure; but until this class of people gets in the majority I cannot see that there would be any more danger of a raid on the "hooks" of the Postal Telegraph office than upon the boxes in the Post-office.

The review goes on to show the dissimilarity between the postal and telegraph service, which is one anybody can understand. Mr. Washburn only refers to cheap telegraphing and cheap postage as being both great civilizers and educators of the people, and says that the public would doubtless be willing to be taxed to support either of them as it is to support free schools. The carrier of letters and the carrier of telegrams are both disseminators of intelligence. The Government performs the one duty, why should it not perform the other? Is it not fair, after all, that if the invention of telegraphing, by affording a more rapid means of letter carrying, has assisted in keeping down the number of letters, and the consequent receipts of the Post-office Department, the Government should have whatever profit there may be in the business? Mr. Washburn does not anywhere assert that the two services are performed in a similar manner. He knows very well that you cannot put despatches into an instrument as you would letters into a bag, and that, therefore, no comparison in point of expense can be made between the two methods of transmission. Knowing this, he would probably not have said, in the words of his reviewer, that "the annual deficit in the revenues of the Post-office Department shows that *neither in that service or in that of the telegraph* can these deficits be made up.

ISLAND.

"Perdu" in the Quaker City.

PHILADELPHIA, August 1st.

TO THE EDITOR OF THE TELEGRAPHER.

SINCE my arrival in this city my observations have not proved as successful as desired. There is but little of interest here to what I had anticipated from the many reports I had heard. There is considerable anxiety to know who "Perdu" is, not only here but elsewhere. For the information of the inquisitive I would state that they must find out.

Some of your readers claim that I have published "lies" in these communications. Now I challenge any one to prove that any of my assertions have been false. The only persons, as far as I can learn, that have made such statements, are those who have been touched "lightly." This is no more than was expected, and therefore I am prepared for anything they choose to contradict. My information has been drawn from both sides, from the most reliable authority, and from personal observations.

But little can be gathered here of interest to your readers. Affairs in the Western Union office are but very little changed since the strike. Some bitter feeling

exists toward the faithful "seven," but no outward demonstrations are made. The company will, as a matter of course, take good care of the faithful.

Rumor has it that the late meeting of the Managers of the Western Union Company, held in New York, was for the purpose of asking an increase of salary for the operators.

It will be remembered mention was made in these letters some time ago that the Franklin and P. & A. lines would consolidate. Reference to the last number of this paper will show that I was correct. The election of Mr. Sweet as General Manager is generally endorsed by the employees of the Franklin Company, and I have no fear but that he will prove a valuable agent for the company, and bring it before the public with a better reputation than it has borne heretofore.

The operators in the Western Union office here seem very well satisfied with the management of affairs in that office, and have but little to complain of except that the company persist in following up operators who resign and keep them from procuring situations elsewhere, as has been the case in one or two instances in Washington. Nothing is said about the late strike or the Morse testimonial.

Affairs in the B. & B. office seem to work very satisfactorily under the present management and the able corps of "My" operators, who are always right and never wrong, but everybody don't know this. One man was pointed out to me with the remark, "That man thinks he is the main stay of the B. & B. office." His appearance struck me as that of a person who, in his own estimation, was of great consequence, but that a long time would be required for others to find it out. Mills with good machinery are a good institution, but where they have inferior machinery they are fit for little but to cause trouble. It is commendable of managers to always stick up for their operators *when they are in the right*; but it is not always the case that those employed at headquarters are always right; they are as liable to err as any others. Managers should be careful, when complaints are made, to give fair play to both sides, and then there would be no grounds for complaints. A sensible operator would never think the worse of a Manager who should give the credit due to others when in the right. This should be one of the golden rules on telegraph lines, but I fear it is not so generally regarded. I am speaking now from what I have heard, and since my departure from Washington, and everything indicates that there is much truth in what I have above stated, not only in one office, but there is a little too much of this in nearly all the large offices. I am confident if Managers would but think a moment, they could not help remedying this growing evil, which is calculated to cause discord among operators. Since I commenced the above I have had an interview with an old telegraphic friend, who has given me some valuable information concerning affairs here, but we do not deem it prudent to make mention of them at present. At some future day, probably, when your columns are not so crowded, I shall review things more fully—quite likely on my return, unless these abuses of the telegraph are remedied.

It is difficult at present to say when and where you will hear from me again. My friends in Washington and elsewhere will keep me fully posted, and I may be expected to appear in the columns of THE TELEGRAPHER at any time. I shall return to Washington on the assembling of Congress if nothing happens, and will try and give you a full account of what has happened during my absence. I hope, by the time I have occasion to write from the capital, things will have been reorganized, and no causes whatever exist for complaints.

PERDU.

The Future of the Competing Telegraph Companies.

BOSTON, July 27.

TO THE EDITOR OF THE TELEGRAPHER.

THE Board of Directors of the Franklin Telegraph Company held a meeting in this city last Monday, and it is authoritatively announced, elected Mr. E. D. L. Sweet, General Superintendent of the A. and P. Telegraph Company, General Superintendent of the Franklin lines.

This action has created considerable excitement upon telegraphic circles, and is variously commented upon. It appears that but five of the nine directors were present at the meeting, and that four out of these five are not yet stockholders in the company, though they proposed to purchase a few shares of the company's stock. Messrs. J. B. Stearns, J. W. Brown and S. A. French, all old Franklin directors and large stockholders were not present at the meeting, and it is credibly asserted that they, together with a large majority of the Franklin stockholders, are opposed to the election of Mr. Sweet, so far as it may appear to reflect upon the management of Mr. J. G. Smith, who, as Superintendent of the Franklin Company, had labored so long and arduously to place it upon a good foundation.

But they will acquiesce for the present, and wait awhile for results; if satisfactory, well and good, if not, they can very easily undo all that has been done, and throw Mr. Sweet and the five directors who voted for him overboard together.

The real object of this move on the part of the Franklin directors is not, as some may suppose, to improve the management of their lines, but to aid in the consolidation of all the "opposition" lines, and to bring them under one management. It is certain that representatives of the A. and P. and the P. and A., as well as of the Franklin, have recently been together in this city, and from what has already been effected it is quite probable that the union of these companies will take place inside of three months, and that Mr. Geo. H. Ellery, now President of the Franklin, or Mr. Gardiner Hubbard, will be the President of the consolidated companies.

If the three companies mentioned above should unite, then the "International," the "Great Western," the "Mississippi Valley" and all the smaller concerns must and will come into the fold—the Southern Company, with its coast lines from Washington to New Orleans, as fast as their lines are opened, follow suit, and the "Western Union" will have a more formidable rival than they have ever yet known, not excepting the "United States," of "blessed memory."

All this is possible, and even more—for if this consolidation can be effected on the right basis, viz., a fair valuation of the property actually owned by each company, and the right men are selected for the management, then the confidence of capitalists and business men will be secured, and it will be easy enough to obtain such additional capital as may be necessary to extend and increase the number of existing lines to the point where the consolidated company may successfully compete with the Western Union.

If this programme is adopted and carried out, an equal division of the telegraphing business of the country, which Mr. Orton declares would be disastrous to both companies, would not follow, for the new company would take at least two thirds of the whole. No man, who is at all familiar with the disposition of the public and the press toward the great monopoly company, will doubt the truth of this assertion.

The question may be asked, if such a result should be brought about how then could the Western Union live and competition be maintained? The answer is plain—an increase of facilities will be followed by a corresponding general increase of business. Let the W. U. reduce its capital stock to ten millions, where it should be, and then, with proper management, even one third of the whole business done would give them fair dividends.

The Franklin stockholders will have a meeting on the 3d prox., and what has been done and what may be done will be fully discussed. If the result of this meeting is favorable to consolidation, it will show that the company begin to realize the situation, and that they have learned something by experience. It is true that the Franklin is as well, and even far better situated to continue the fight on existing bases as any of the other opposition companies; but Mr. Orton is right, in his statement to the House Postal Telegraph Committee, that no one of the opposition companies are paying expenses, and keeping their property good, from receipts of their lines. They must "unite or die."

ESSEX.

ANSWERS TO CORRESPONDENTS.

JONATHAN.—We cannot advise you in such a case. An appeal to the President of the company, if couched in proper terms, might do some good.

W. H. M., Jr.—If you will send us a sketch of your invention we could possibly tell you whether it would be patentable. There is abundant room for invention in the way of lightning arresters. None of them operate as perfectly as could be desired.

INQUIRER, Ont.—Kerite cables have recently been laid connecting the New York Fire Alarm lines with the islands in the East River. They are highly spoken of, but have not as yet been in use long enough to satisfactorily determine their absolute value.

E. W. B., N. J.—The statement you refer to is entirely incorrect. The Fire Alarm Telegraph was invented by W. F. Channing and Moses G. Farmer, and was in operation in Boston and other cities fifteen years before the party who claims the invention was ever heard of in connection with the subject.

TELEGRAPHER, Toronto.—We will endeavor to forward you the documents asked for. The situations advertised are filled, but the present demand for strictly first class operators is great. We know nothing of the paper referred to. Is it not the London *Electric Telegraph Review*, noticed in another column, that is referred to?

Review of Postal Telegraph Report.

In consequence of the absence of the writer of the Review of the Report on the Postal Telegraph, its continuation is postponed until our next number. The subject of a Government absorption of the telegraph interests of the country is of such importance to the telegraphic profession that we are sure no apology is needed for the space its discussion occupies in THE TELEGRAPHER.

PERSONALS.

Mr. JOHN FOLEY is the manager of the Atlantic and Pacific office at San Francisco, Cal., with Mr. JOHN CURRAN as assistant.

Mr. F. S. VAN VALKENBURGH is manager of the Sacramento, Cal., office of the A. & P. Co., assisted by Mr. JAMES K. PARSONS.

Mr. J. J. ASH is manager of the Marysville, Cal., office of the A. & P. Co.

Mr. C. WASHEIM is manager of the San Jose, Cal., office of the A. & P. Co.

Miss MATTIE EVARTS, formerly of the Western Union office, Chicago, Ill., has been on a trip to California, and has just returned to the East.

Mr. A. C. IRWIN, formerly operator and clerk of the C. & O. Railroad, at Marysville, Cal., has been appointed agent of the road at that place.

Mr. J. F. SPRAGUE, formerly of Emigrant Gap, C. P. Railroad, has been appointed agent and operator of the C. & O. Railroad at Chico, Cal.

Mr. JAMES LAVEN, formerly at Auburn, has been appointed agent and operator at Rocklin office of the C. P. Railroad.

Mr. C. F. GOODING, formerly in the C. P. Railroad office at Winnemucca, Nevada, has been appointed agent and operator at Summit, Cal.

Mr. JOHN CLOWES, formerly chief operator of the Sacramento Western Union office, has been transferred to the Reno, Nevada, office of the same company.

Mr. L. R. STORROR succeeds Mr. CLOWES as chief operator at Sacramento.

Mr. JOSEPH THATCHER has been transferred from Virginia City, Nev., to the Sacramento office of the Western Union Co.

Mr. BENJ. MINER, formerly at Summit, Cal., has been transferred to the Winnemucca office.

Mr. JOSEPH SEARS has been transferred from the Virginia, Nev., to the Reno, Nev., W. U. office.

Mr. A. D. MCCOY, formerly at Truckee, has been transferred to Reno, Nev., C. P. R. R.

Mr. T. R. KNOX has resigned his position with the W. U. Telegraph Company at Oakland, Cal., and accepted a position at Truckee with the A. & P. Co.

Mr. JNO. E. CLARKE has accepted the office of the W. U. Co. at Austin, Nev.

Mr. L. N. JACOBS is working for the C. P. R. R. in Sacramento.

Mr. WM. G. JONES has been transferred from the Western Union office, Washington, D. C., to the Philadelphia office of the same company.

THE TELEGRAPH.

The English Postal Telegraph.

THE following statement shows the total number of messages forwarded from postal telegraph stations in the United Kingdom during the four weeks ending July 16, 1870:

Week ending	Total number of Messages forwarded.	Increase on previous week.	Decrease on previous week.
June 25.....	194,696	5,598
July 2.....	185,520	9,176
" 9.....	192,048	6,528
" 16.....	214,419	22,371

The above statement illustrates the proverb that "it is an ill wind that blows nobody good." The immense increase in business, caused by the breaking out of the war between France and Prussia is strikingly manifest.

Telegraphic Strategy.

ON Sunday, July 31st, the Pacific and Atlantic Company accomplished another of those brilliant strategical manoeuvres for which they have already obtained some celebrity. It is well known that to get permission to build telegraph lines in the streets of New York it is necessary to disburse numerous shekels, and to bow the knee abjectly before the unwashed Milesians who graciously condescend to allow the free (?) citizens of Manhattan to be ruled by them. The P. & A. managers, however, by concentrating a large force of men, and commencing operations at midnight on Saturday, contrived to complete a mile of line on Ninth avenue within the following twenty-four hours, fearless of the injunctions and other legal "stoppers" that are so readily procured "for a consideration," and so freely used, but which, unfortunately, don't operate on Sunday. For a corporation the P. and A. certainly move quick.

FOREIGN TELEGRAPHIC NOTES.

THE French Director of Telegraphs announced, on the 19th July, that "telegraphic communication between France and Prussia is suspended."

An order has been received at the English postal telegraph offices that no messages are to be received in cipher for transmission to France.

The *Electric Telegraph Review* says that it is possible that the outbreak of the war will materially increase the revenue derived by the Government from the telegraphs. The number of messages passing through the central station in Telegraph street on the 15th inst. was nearly 19,500, or 4,500 above the usual daily average.

The telegraph office at Hamburg gives notice that in consequence of the enormous pressure of Government business they cannot be held responsible for delays in private messages, though they will do their best to avoid inconvenience to the public.

The *Electric Telegraph Review* says that the member of Parliament from Sheffield waited upon Mr. Scudamore last week, in relation to the telegraphic blockade. It seems that Sheffield has a special wire, but, notwithstanding, the community and the newspapers have been subject to the greatest inconvenience. Mr. Scudamore states that he is not doing things in a stingy manner. He admits that greater facilities are needed, and says they will be provided as speedily as possible.

The Franklin Telegraph Company.

THE Boston correspondent of the *Providence Journal* says that, at the regular stockholders' meeting of the Franklin Telegraph Company, August 3d, the report showed that for three years past the company had been constantly losing money, and so largely during the year past as to call for some decisive action on the part of the stockholders. The directors were openly accused of being incompetent to manage the affairs of the company, and their resignation demanded. The debate was sharp, and the result was that nearly every one lost temper, and tried to talk at once. One of the directors offered to resign if anybody would take his stock off his hands—not for what it was worth but for what it cost him. He found no takers. The stockholders declared that the directors had no right to choose a manager of themselves, and passed a series of resolutions that will pretty effectually trammel him in the discharge of his duties. The breach is not yet healed, and probably another meeting will be called to reconcile the differences of the two parties.

An Item about Magnets.

In a recent number of the *Scientific American* we noticed, among the "Answers to Correspondents," the following:

G. F. G., of Mich.—The wire used in telegraph magnets is covered with silk or gum. It is not uncovered, as you suppose.

If our cotemporary will refer to page 206, volume 13, of his own paper, he will find an illustrated description of an improved telegraph magnet, with *naked wire helices*, which is stated to have been patented through the *Scientific American Agency* by Dr. L. BRADLEY, and we can assure him that the improvement proved a valuable one, and has come into very extensive use. Undoubtedly "G. F. G." is fortunate enough to possess one of these magnets. We wonder what he will think when he is gravely advised that the testimony of his own eyesight is not to be believed!

New Patents.

For the week ending August 9, and each bearing that date.

No. 106,141.—ELECTRO-MAGNETIC LOW WATER ALARM FOR STEAM BOILER. Wright Duryea, Glen Cove, N. Y.

Claim.—The combination of the floating circuit breaker D, the insulating tube A, and the insulated circuit wires b' b', to operate substantially as herein described, for the purpose set forth.

No. 106,142.—ELECTRO-MAGNETIC LOW WATER DETECTOR FOR STEAM BOILER. Wright Duryea, Glen Cove, N. Y.

Claim.—1. An expanding and contracting circuit closer, arranged within a steam boiler or its connections, for operation by the difference of temperature of the steam and water therein, in connection with an electro-magnetic alarm or signal, substantially as and for the purpose herein set forth.

2. The combination of the wire terminal G G', in the break of the circuit, the siphon tube F, containing quicksilver, the outer tube E, and the pipe or pipes A A', arranged for operation in connection with the boiler and with an electro-magnetic alarm or signal, essentially as specified.

DIED.

ECKERT.—At Piqua, Ohio, Monday, August 8, 1870, C. H. ECKERT, father of Gen. T. T. Eckert, of the Western Union Telegraph Company.



SATURDAY, AUGUST 13, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE

NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG...Box 248 P. O., Washington, D. C.

Vice-President..W. O. LEWIS...New York.

Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.

Recording Sec..W. W. BURHANS...Box 6010 P. O., New York.

Corres. Sec....F. L. POPE.....Box 6010 P. O., N. Y.

GONE!

OUR readers are hereby informed that any unusual brilliancy or variety which may characterize the present issue of THE TELEGRAPHER is solely attributable to the absence of the Editor, who is, at this writing, supposed to be in exile among the inaccessible fastnesses of the Green Mountains, where THE TELEGRAPHER and the telegraph are alike unknown. Our friends will join with us in hoping he may enjoy his brief respite from the "demonition grind" of newspaper life, and return refreshed in body and spirit.

A JOURNALISTIC DOXOLOGY.

IN the midst of a prolonged spell of dry weather, which has set all the agriculturists in the country to praying for rain with the energy of desperation, an official contemporary takes occasion, of all times in the world, to praise God for this feature of our climate. His especial gratitude is accounted for solely by the fact that it enables dividends to be earned with glass insulators by the Western Union Company—when the Directors pass them, we suppose. He neglects to state how much they earn in wet weather, and doesn't furnish any statistics as to the number of despatches delayed at such times, and not delivered till the next day after they are handed in for transmission. As the earnings of the company appear to depend principally upon favorable meteorological conditions, it is distressing to think what the financial result of a chronic period of wet weather might be.

Though speaking of glass as an insulator in the kindest possible terms, our contemporary cannot refrain from expressing a wish that it "would take on the surrounding temperature more easily, and not sweat when the air is warmer than itself." The idea of glass getting itself into a profuse perspiration from the warmth of the atmosphere is good. We shall hear of it laughing and dancing next.

The General Superintendent, or Board of Directors, or somebody, is popularly supposed to be hard at work, at this writing, in getting up "the perfect insulator which we all feel sure is coming by-and-by." But, as official machinery always moves pretty slow at the best, we would suggest, as a temporary expedient, it wouldn't be a bad plan for them to avail themselves of the proposition of Mr. BROOKS, recently published in THE TELEGRAPHER, who publicly offers to contract to establish and maintain a degree of insulation upon a circuit of 1,000 miles which will permit it to be worked at full speed during rain without repeaters. It can do no harm to try the experiment. If it succeeds it will be a result worth far more than it costs, and if it fails, BROOKS will be, for some time at least, effectually extinguished—which we are inclined to think would be considered in some quarters a desirable consummation.

And then, too, what a triumph over the "croakers!" And when, by-and-by, the "official" insulator appears, endorsed by all the corporation electricians, the temporary makeshifts, that could only work a paltry thousand miles in a wet day, will be swept away into merited oblivion.

In conclusion, our editorial brother exclaims that the spectacle of the British Postmaster General anxiously "waiting for a thaw," to relieve his lines, strikes him with prolonged amazement! Evidently he never heard of such a thing before. He must have been out of town at the time of the great sleet and ice storm about Christmas, in 1867, when the Western Union and all the other lines were prostrated. To the best of our recollection a "thaw" was looked for very anxiously about that time, and very little telegraphing was indulged in until it came.

Either our editorial brother or else the Western Union company's official electrician must be at fault about this climate question, for the latter succeeded in demonstrating, in an article published in the *Springfield Republican* a year or two since, that the climate in Great Britain was much drier than in America, and more favorable to the working of telegraphs. We shall not at this time undertake to decide which is right—perhaps they both are. The advent of the "official insulator" will happily put an end to all these meteorological disputes.

Automatic Telegraphy.

IN answer to several recent inquiries relative to the "fast system of telegraphy," of which so much was said six or eight months ago by Mr. D. H. CRAIG, and which has been so much decried by parties whose interests its success would jeopardize, we are informed that Mr. CRAIG and his associates are still sanguine of its success. Should it realize one half of the advantages claimed, it cannot fail to have an important influence in the future of scientific and practical telegraphy everywhere.

Every possible obstacle has been thrown in the way of the construction of the experimental line between this city and Washington, but it has at last been completed, and LITTLE's automatic instruments are now being placed upon the line under the immediate direction of Mr. CRAIG, assisted by Mr. GEORGE H. GRACE, an energetic, practical telegrapher, formerly Superintendent of the Insulated Lines Company. When this line is in operation we shall of course post our readers as to the practical operation of the new system.

The Franklin Telegraph War.

By reference to another part of this paper it will be seen that the stockholders and directors of the Franklin Telegraph Company have been enjoying a rather exciting time at one or two of their late meetings. Among the many conflicting rumors afloat it is not easy to get at the facts of the origin and progress of the difficulty; it is believed, however, to be substantially as follows: After the late consolidation of the Pacific Railway lines with the Atlantic and Pacific Company it became desirable, in the interests of the former corporation, to establish connections with Boston and Washington. By the purchase of Franklin stock, and probably with some assistance from a portion of the original stockholders who were dissatisfied with the management, they succeeded in electing a board of directors at the June meeting, the majority of whom were in the Atlantic and Pacific interest. Some two weeks ago Mr. E. D. L. SWEET, General Superintendent of the A. and P. Company, was also appointed General Manager of the Franklin. This stirred up the anti-consolidationists, most of whom are in favor of Sup't J. G. SMITH's administration, as the new appointment appeared to reflect strongly upon his management of the line. A very large meeting of the stockholders was held in Boston a few days since, and after an exciting debate resolutions were passed requesting the resignation of the directors, and instructing the President to call another

meeting of the stockholders on the 5th of August, to fill the vacancies.

The directors, however, declined to resign, and the matter now stands adjourned to the 15th prox., when it is expected that the final struggle will take place. The SWEET party are determined to bring about a consolidation, under the A. and P. management, while the SMITH party are equally determined to keep the line in their own hands. Both parties appear to be quite sanguine of success. It is reported that the redoubtable BURD has recently been observed in consultation with FISK, Jr., in behalf of the SMITH faction. If FISK gets into the fight considerable fun may confidently be expected. Knowing ones assert that the balance of power is held by parties not altogether satisfied with either of the conflicting administrations. If such is the case it will be somewhat difficult to predict the ultimate result.

The Electric Telegraph and Railway Review.

A HANDSOMELY printed and interesting journal, with the above title, containing 20 pages about the size of THE TELEGRAPHER, is published weekly by THOMAS EVANS LUNDY, 166 City Road, London, E. C., at 21s. 4d. (\$5.15 gold) per year. The greater portion of its contents are devoted to telegraphic matters, it being especially designed as a record of everything interesting to telegraphers, stockholders, electricians, contractors, operators, and the scientific world at home and abroad. It is conducted with much ability, and will be found invaluable to all who desire to keep themselves fully informed upon telegraphic matters in Europe.

Bradley's Patent Helices.

WE would ask the attention of our readers to the new advertisement of DR. BRADLEY in another column, by which it will be seen that he has made arrangements to supply his celebrated helices and electro-magnets to manufacturers and others in any quantity, and at reasonable rates. They are wound with naked wire by machinery, by which means the convolutions are brought much closer together than is possible with the silk covered wire ordinarily used. The superiority of these magnets is endorsed by some of the best practical electricians in the country. The late Prof. PAGE pronounced this the most valuable improvement ever made in the electro-magnet since the introduction of the long fine wire. Mr. F. L. POPE says he has used over three hundred pair of the BRADLEY helices in the manufacture of printing instruments, and considers them the best in use, not only from their great power but their perfect uniformity. DR. BRADLEY also manufactures instruments of all kinds at very reasonable prices, as will be seen by reference to his advertisement.

Flemming, Potter & Co.

IN another column will be found the advertisement of the above firm, which has recently entered the telegraphic field with a degree of energy, enterprise and knowledge that can scarcely fail to win success. In consequence of the great number of important railroads converging at Philadelphia, most of which own and operate telegraph lines exclusively for railroad service, there are abundant opportunities for a large business in that quarter in the furnishing of telegraph instruments and supplies. Messrs. FLEMMING, POTTER & Co. have introduced a new form of relay, which is said to possess valuable features. Every piece of apparatus made by them is carefully tested before leaving the establishment, thus ensuring the purchaser a good article, which will give entire satisfaction. They also publish an elementary treatise on the art of telegraphing, which we briefly noticed in our last issue. We cordially wish them success in their enterprise.

A TELEGRAPH line has been built over the new Wickford R. R. in Rhode Island, and an office is to be established at Wickford Centre.

FOR PRIVATE TELEGRAPH LINES.

EDISON & ANDERS' MAGNETOGRAPH.

A simple and cheap Alphabetical Dial Instrument, for private lines. Requires no batteries. A pair of these instruments for sale by

F. L. POPE,

80 BROADWAY, Room 5.

ELECTRIC TELEGRAPH WORKS,

N. W. CORNER SECOND & CHESTNUT STREETS,

PHILADELPHIA,

FLEMMING, POTTER & CO.,

MANUFACTURERS OF EVERY DESCRIPTION OF

Telegraphic Instruments,

Electrical Apparatus

AND

RAILWAY SIGNALS.

BRADLEY'S PATENT HELICES

FOR

ELECTRO MAGNETS

AND

TELEGRAPHIC INSTRUMENTS.

These Helices are composed of NAKED COPPER WIRE, carefully wound by ACCURATE MACHINERY, so that the convolutions are separated by a uniform space of only

ONE EIGHT HUNDREDTH OF AN INCH!

A conducting wire of any given length and section, wound in this manner, will allow a much

GREATER NUMBER OF CONVOLUTIONS

around the soft iron core than when covered with silk in the usual manner, thereby

INCREASING the MAGNETIC EFFECT more than 20 per cent.,

without adding to the resistance, or to the battery power required.

These improved Helices have now been extensively used in this country more than nine years, and their great superiority over all others has been FULLY DEMONSTRATED.

In the manufacture of the Helices none but

PURE COPPER WIRE

of the highest conductivity is employed, all the wire used being CAREFULLY AND THOROUGHLY TESTED.

In response to numerous requests, the undersigned has now made arrangements to supply Manufacturers and others with these CELEBRATED HELICES in any quantity, at short notice and upon reasonable terms.

COMPLETE ELECTRO-MAGNETS,

with cores of pure soft iron of superior quality, or HELICES and SPOOLS of any dimensions, and of ANY REQUIRED RESISTANCE, will be furnished to order.

Also, constantly on hand and for sale

BRADLEY'S

Improved Telegraph Instruments.

Attention is respectfully called to the following

PRICE LIST.

Button Repeaters.....	\$6 00
Relays, with Helices in bone rubber cylinders (very fine).....	18 50
Small Box Relays.....	16 00
Medium Box Relays.....	17 00
Main Sounders, same as the above, with heavy armature levers, without local connections, 75 cents less.	
Pocket Relays, with all the adjustments of the above, and good Lever Keys.....	22 00
Excellent Registers.....	40 00
Pony Sounders.....	6 75
Keys.....	6 50
Lightning Arrester, with cut-out and switches for grounding either wire.....	6 00

All other appliances made to order. Extra Spools, for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old Spools taken at the price of new wire by the pound. Goods sent to all parts of the continent, with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post-office order, in which case he will make no charge for package.

He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

10 per cent. discount on bills of \$20 and over.

DR. L. BRADLEY,

No. 7 Exchange Place, Jersey City, N. J.

GALVANIZED TELEGRAPH WIRE.

LONG LENGTHS!! FEW JOINTS!!

SUPERIOR QUALITY! LOW PRICES!

The Wire manufactured by Messrs. **RICHARD JOHNSON & NEPHEW**, Manchester, England, has attained its celebrity on this Continent mostly from its long lengths—a joint occurring only on the average once in about 1,200 feet. The advantage of this feature will be apparent to all telegraph constructors. It is accomplished by a process peculiar to Messrs. JOHNSON'S establishment, and they are the only manufacturers in England who can do it.

L. G. TILLOTSON & CO.,

Sole Agents for the U. S.

Also, Sole Agents for the **American Compound Telegraph Wire Co.**

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SHAWK & FOOTE,

Electrical Instrument Manufacturers,

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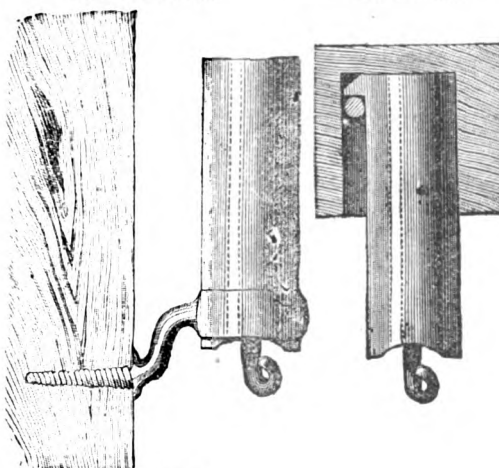
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REPAIRING NEATLY DONE.

BROOKS' PATENT PARAFFINE INSULATOR.

FOR SIDE OF POLE.

FOR CROSS-ARM.

**L. G. TILLOTSON & CO.,**
NEW YORK,

AND

BLISS, TILLOTSON & CO.,
CHICAGO,

SOLE AGENTS FOR THE UNITED STATES.

The improvements introduced in the construction of this Insulator make it, beyond question, the BEST.

Its insulating properties exceed those of the glass a hundred thousand fold.

In strength and durability it has no equal.

They are warranted not to break or part.

They are made with a screw shank, to fasten into the pole, price 38 cents each, or without the screw, for cross-arms, 30 cents each.

Pamphlets furnished, with full description.

A stock of the Insulators always on hand at our stores.

THE BROOKS' INSULATOR, with the PATENT COMPOUND WIRE and our PATENT MAGNETS, constitute the best Telegraph Lines ever constructed.

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BLISS, TILLOTSON & CO.,

247 SO. WATER ST., CHICAGO.

Sole Agents of American Compound Telegraph Wire Company.

Importers of English Galvanized Wire; Manufacturers and Dealers in every description of Telegraph Machinery and Supplies.

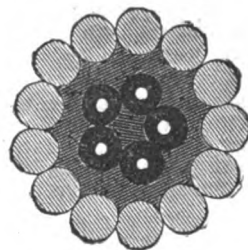
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SAMUEL C. BISHOP,

PROPRIETOR,



ONLY AMERICAN MANUFACTURER

OF

PURE GUTTA-PERCHA GOODS

IN THE

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Have on hand, and make to order

SUBMARINE TELEGRAPH CABLES,

INSULATED WIRES, for

TELEGRAPH AND ELECTRIC USE, and for

BLASTING AND MINING PURPOSES,

in every variety desired.

As an Insulation for Telegraph Cables and Electric Conductors GUTTA-PERCHA has been universally adopted by all scientific and practical Electricians and Manufacturers of Telegraph Cables and Wires in this country and Europe, and has sustained, with increasing confidence in its superiority, the practical test of over twenty years' general use.

The PROPRIETOR would say, to all parties desiring

SUBMARINE TELEGRAPH CABLES,

that he will guarantee to make and deliver at his Factory any style of Cable, Insulated with Gutta-Percha, as low as they can import Cable of the same style and quality.

ORDERS RECEIVED AT THE FACTORY.

Messrs. L. G. TILLOTSON & CO.,

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AND

BLISS, TILLOTSON & CO.,

247 SO. WATER ST. CHICAGO, ILL.,

have been appointed by me GENERAL AGENTS for the sale of any Telegraph Cable or Wire manufactured at the Works in New York, at Factory Prices, delivered in New York.

JOHN THORNLEY, 503 Chestnut St., Philadelphia,

has been appointed Agent for the sale of any and all goods manufactured by me, at Factory Prices, delivered in New York.

Any Goods of my manufacture (except Telegraph Goods) are for sale in New York by

H. G. NORTON & CO., 26 Park Place,**RUBBER CLOTHING CO., 347 Broadway,****A. D. & C. A. HODGMAN, 201 Broadway.****SAMUEL C. BISHOP.**

OFFICE AT FACTORY.

CHESTER, PARTRICK & CO.,
TELEGRAPHIC
AND
ELECTRICAL ENGINEERS,
CONTRACTORS, etc.,

38 South Fourth Street Philadelphia,

Manufacturers of, and dealers in every variety of
TELEGRAPHIC, ELECTRIC, AND PHILOSOPHICAL APPA-
RATUS, BATTERIES, WIRE, ACIDS, INSULATORS,
MEDICAL INSTRUMENTS, AND OTHER SUPPLIES.
Also, Contractors for the construction, re-construction, and
repair of

TELEGRAPH LINES, SIMPLE BURGLAR ALARMS, FOR
PRIVATE RESIDENCES, AND BURGLAR ALARMS
WITH "TELL-TALE CLOCK," AND OTHER
APPARATUS FOR BANKS AND
PUBLIC BUILDINGS.

Among other Telegraphic Supplies constantly kept on hand,
they are prepared to furnish promptly the following novel
articles:

KERITE (OR HORN COVERED) COPPER OR COMPOUND
WIRE OR CABLES,
COVERED COMPOUND AIR LINE WIRE,
BLASTING APPARATUS, CARTRIDGES, BATTERIES, &c., &c.
CALCIUM LIGHTING APPARATUS,
MEDICAL BATTERIES,
INDUCED AND DIRECT CURRENTS;
ELECTRO-PLATERS' BATTERIES AND MATERIALS,
ELECTRO GONGS, OF ANY DESIRED SIZE OR WEIGHT,
ALARM APPARATUS.
PATENT APPARATUS FOR THE MANUFACTURE OF NITRO-
GLYCERINE, ELECTRICAL CLOCK WORK,
&c., &c., &c.

They guarantee to give satisfaction to all who favor them with
orders, in the promptness of execution and in the quality of
articles supplied.

Also, have on hand and for sale,
MODERN PRACTICE OF THE ELECTRIC TELEGRAPH.

BY
F. L. POPE.

AMERICAN
COMPOUND TELEGRAPH LINE WIRE.

COPPER FOR CONDUCTIVITY.

STEEL FOR STRENGTH.

The superiority of the COMPOUND TELEGRAPH WIRE,
compared with iron, consists in its LIGHTNESS, reducing by over
fifty per cent. the number of poles and insulators required;

Relative TENSILE STRENGTH, homogeneity and elasticity—de-
creasing the liability to breakage from cold weather, sleet, etc.;

CONDUCTIVITY—insuring great improvement in the working of
lines in any condition of the weather;

And in its DURABILITY, which greatly exceeds that of the best
galvanized iron wire;

Altogether resulting in a very great reduction in the cost of
maintaining and working telegraph lines, while, at the same
time, insuring

EFFICIENCY AND RELIABILITY.

Address—

American Compound Telegraph Wire Co.,

ALANSON CARY, Treasurer,

No. 234 West 29th St.,

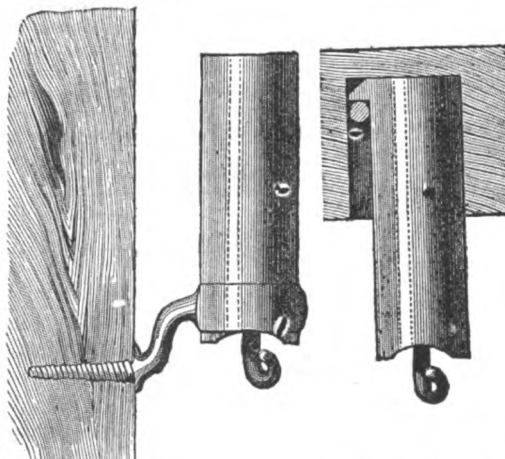
Agents in New York,

L. G. TILLOTSON & CO.,

8 DEY STREET.

BROOKS'
PATENT PARAFFINE INSULATOR
WORKS,

21 ASPEN ST., North of 2123 CHESTNUT ST.,
PHILADELPHIA.



This Insulator shows a resistance of 100,000,000,000 B. A. Units,
excelling ordinary Insulators in humid weather fully one
hundred thousand fold.

Its great strength and durability make it the most economical
Insulator in use.

Every report received from them is of the most favorable
character.

A HAND-BOOK OF
PRACTICAL TELEGRAPHY,

BY
R. S. CULLEY,
ENGINEER TO THE

ELECTRIC AND INTERNATIONAL
TELEGRAPH COMPANY.

Published with the sanction of the Chairman and Directors of
the Electric and International Telegraph Company, and adopted
by the Department of Telegraphs for India.

FOURTH EDITION,
REVISED and ENLARGED.

1 vol. 8vo, cloth.....\$5 00.

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PUBLISHER,
23, MURRAY STREET.

ESTABLISHED 1842.

ESTABLISHED 1842.

COVERED WIRES,

made from Lake Superior Copper, warranted strictly
pure, covered with Hemp, Flax, Linen, Cotton, Silk or
other material, for Telegraph Instruments, Electro-mag-
netic Machines, Philosophical Apparatus, and all kinds of

Electrical Purposes.

Also, PLAIN, WOVEN, BRAIDED, ENAMELLED,
SHELLACED, PARAFFINED, and all kinds of

TELEGRAPH OFFICE WIRES,

Also, Telegraph Switch Cords,

many Patterns, Plain, Woven and Braided. Parties being
partial to any particular kind need only enclose a small
specimen in letter, and it can be imitated in every parti-
cular.

CONDUCTING CORDS, POLE CORDS, TINSEL.

C. THOMPSON,
(SUCCESSOR TO JOSIAH B. THOMPSON,)

29 North 20th Street, Philadelphia, Pa.

L. G. TILLOTSON & CO.,

No. 8 DEY STREET, N. Y.,

Manufacturers of

Telegraph Instruments and Supplies

OF EVERY DESCRIPTION.

Glass Insulators, Brackets, &c.

Zincs, Tumblers, Porous Cups, and all kinds of Battery
Material.

Hill's Patent Galvanic Battery.

Ogden's Improved Carbons, with the Immersed Platina
Connection.

Agents for pure Nitric and Sulphuric Acids, manufactured
by the Lodi Chemical Works.

" C. F. Varley's Patent Paraffine Insulator.

" Gutta-Percha covered Wire and Cables American
Manufacture.

" the best Manufacture of Plain and Galvanized Iron
Wire.

" of American Compound Telegraph Wire Co.

" for sale of

POPE'S

" MODERN PRACTICE OF

THE ELECTRIC TELEGRAPH,"

Publishers of Prof. J. E. SMITH'S

"MANUAL OF TELEGRAPHY."

BLISS, TILLOTSON & CO.,

247 SOUTH WATER ST.,

CHICAGO, ILL.,

MANUFACTURERS AND DEALERS IN

Telegraph Machinery and Supplies.

Instruments repaired at short notice.

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New York.

Chicago.

SPECIAL NOTICE.

L. G. TILLOTSON & CO.,

8 DEY STREET, NEW YORK.

AND

BLISS, TILLOTSON & CO.,

247 SOUTH WATER STREET, CHICAGO, Ill.

Respectfully inform their Customers, and all parties purchasing

TELEGRAPH AND ELECTRIC MATERIAL.

that they have been appointed by S. O. BISHOP, successor to the

BISHOP GUTTA-PERCHA COMPANY,

OF NEW YORK,

GENERAL AGENTS for the sale of any articles manufactured by him for

TELEGRAPHIC AND ELECTRIC USE.

They are now prepared to fill promptly any orders for goods on hand, or to be manufactured, at the Manufacturer's prices in New York.

The long experience of Mr. SAMUEL O. BISHOP, in the manufacture of

PURE GUTTA-PERCHA GOODS,

and the reputation he has gained and enjoys for the superior quality and perfection of manufacture of

SUBMARINE TELEGRAPH CABLES

AND

INSULATED WIRES

of various kinds, insulated with

PURE GUTTA-PERCHA,

renders this arrangement a very important one for our numerous patrons throughout the country, and we confidently recommend these goods to their especial notice as being

FULLY EQUAL, IF NOT SUPERIOR,

to any other in use.

THE PRINCIPAL ARTICLES manufactured and offered for sale are

SUBMARINE TELEGRAPH CABLES,

(Any size required).

Gutta-Percha covered Telegraph Office Wire, in great variety of size and style.

SUBTERRANEAN WIRES, covered with Gutta-Percha and Lead outside, various sizes.

SUBTERRANEAN WIRES with Gutta-Percha and braided fibre, and BISHOP'S PATENT COMPOUND outside.

SUBTERRANEAN WIRES, with Fibre and Bishop's Patent Compound outside.

POLE LINE CORDAGE, with Fibre, and Bishop's Patent Compound outside.

BRIDGE'S PATENT Electric Cordage.

BRIDGE'S PATENT Double Covered Cordage.

BISHOP'S PATENT COMPOUND WIRE,

for out-door use and office connections.

INSULATED WIRES,

with two Conductors, both plain and with braid outside, and a great variety of other kinds made to order.

COTTON AND SILK-COVERED WIRES, both twist and braided.

This arrangement,

TOGETHER WITH OUR OWN

EXTENSIVE MANUFACTORY in NEW YORK,

and our great variety of TELEGRAPH MATERIAL in stock, fully establish our claim that our stores are the

DEPOTS OF TELEGRAPH SUPPLIES IN THIS COUNTRY.

IMPORTANT TO

TELEGRAPH MANAGERS.

Hereafter all Magnets of our manufacture will have the resistance plainly marked upon each.

MAGNETS supplied of any resistance required.

We have in stock 200 miles No. 8, Best Quality GALVANIZED WIRE, which we offer at Six Cents per lb., Gold.

Also, Nos. 9 and 12, at Lowest Market Rates.

L. G. TILLOTSON & CO.,

8 DEY STREET, N. Y.

RUSSELLS'
American Steam Printing House

28, 30 & 32 CENTRE STREET, N. Y.

EXECUTES ALL DESCRIPTIONS OF

Book, Job and Commercial Printing.

TELEGRAPH PRINTING A SPECIALTY.

SOLE AGENCY IN THE UNITED STATES

FOR THE CELEBRATED

GALVANIZED WIRES

MANUFACTURED BY

Messrs. RICHARD JOHNSON & NEPHEW,
Manchester, England.

L. G. TILLOTSON & CO.,

No. 8 DEY STREET, NEW YORK,

offer this very Superior Wire at Greatly Reduced Prices.

ALL SIZES AND QUALITIES.

Also, sole Agents of the

AMERICAN COMPOUND TELEGRAPH WIRE COMPANY

AND

BROOKS' PATENT PARAFFINE INSULATORS.

MANUFACTURERS OF

Telegraph Instruments and Battery Materials of every description.

AMERICAN FIRE ALARM

AND

POLICE TELEGRAPH,

GAMEWELL & CO., Proprietors,

104 Centre Street, N. Y.

This system of Fire Alarm Telegraph, with a central office, or upon the

AUTOMATIC PLAN,

is now in operation in the following cities, to which reference is made for evidence of its great superiority and value, and UNIFORM reliability:

BOSTON,
CHICAGO,
PHILADELPHIA,
CINCINNATI,
ST. LOUIS,
BUFFALO,
BALTIMORE,
MOBILE,
NEW ORLEANS,
PITTSBURG,
LOUISVILLE,
ALLEGHENY,
MONTREAL,
QUEBEC,PORTLAND,
ST. JOHN, N. B.,
HARTFORD,
TROY,
NEW HAVEN,
ROCHESTER,
SPRINGFIELD,
TOLEDO,
ALBANY,
COLUMBUS,
LAWRENCE,
MILWAUKEE,
SAN FRANCISCO,
CAMBRIDGE,

WASHINGTON, D. C.

THE DISTINCTIVE FEATURES OF THE

AMERICAN

FIRE ALARM TELEGRAPH

are a Combination of Circuits, the Automatic Signal Boxes, Electro-Mechanical Bell and Gong Strikers.

THE AMERICAN FIRE ALARM AND POLICE TELEGRAPH

is covered by some twenty patents. Very early after its introduction into Boston, GAMEWELL & CO. purchased the original patents of FARMER & CHANNING, and during the past fifteen years have spared no expense or pains to improve and perfect this system.

Any information desired in regard to the above system will be cheerfully and promptly furnished upon application at the office.

A pamphlet, setting forth more fully its advantages and superiority, has been printed, and will be supplied to Municipal Authorities and others interested in Fire Alarm and Police Telegraphy, upon application as above.

NEW
SUBMARINE CABLE.

A. G. DAY'S

KERITE,

OR

COMPOUND RUBBER COVERED WIRE

SUBTERRANEAN & AERIAL WIRES,

OF THE

HIGHEST INSULATION.

CHARLES T. & J. N. CHESTER,

No. 104 Centre Street,

EXCLUSIVE AGENTS

offer for sale, as TELEGRAPH AND ELECTRIC CONDUCTORS, Wires protected by the BEST INSULATOR and STRONGEST RESISTANT TO CHEMICAL ACTION and ATMOSPHERIC INFLUENCE.

After the experience of several years in the use of KERITE for purposes of insulation, we have concluded to adopt it as the very best substance for wire covering, not only for use of offices but for SUBTERRANEAN, SUBMARINE and AERIAL LINES. We have used it unprotected for years under ground, and exposed to the most injurious atmospheric influences—to heat, cold and moisture—and have yet to learn its failure, when other ordinary insulating substances would have been rapidly destroyed. UNDER WATER it has retained an electrical charge for many hours, thus ranking it in the HIGHEST GRADE of NON-CONDUCTORS.

We have, therefore, made arrangements not only to secure THE EXCLUSIVE AGENCY for its sale, for the purposes for which we have already sold it so largely, but to furnish complete

IRON-CLAD CABLES,

of the usual size, with KERITE COVER, believing that it will exceed, in insulation for submarine purposes, ANYTHING HITHERTO MANUFACTURED.

We shall be happy to furnish estimates for any amount and size of cable, which will be found to compete with any other construction, both in quality and price.

In corroboration of our statements we append extracts from reports of those who have exposed it to the severest practical tests.

From Prof. SILLIMAN, of Yale College, Nov. 10, 1868.

"I am satisfied, as the result of my own researches, that ozone is by far the most fatal of atmospheric influences. I have submitted portions of KERITE to the action of a highly ozonized air for a sufficient length of time to prove them, and at the same time have exposed the best English Gutta-Percha Covered Cable to the same tests, with the following result: After long experience KERITE resists perfectly! The best English Gutta-Percha Cable was speedily destroyed. A few days' exposure to ozone would produce more effect than many years in a normal atmosphere, exposed to carbonic disulphide, nitric acid, sulphuric acid, sulphuric dioxide, nitric peroxide, chlorine gas and alkaline hydrates. Gutta-Percha is immediately dissolved in carbonic disulphide, and powerfully acted upon by alkaline hydrates. Some samples of KERITE resist the action of the former in a surprising manner, and are completely unaffected by the latter."

"NEW YORK, May 14, 1870.

"In nearly two years since the foregoing was written I have made a considerable number of experiments upon the KERITE Compound of A. G. DAY, all of which tend to confirm former results: while the practical test of the continued use of electrical conductors covered with it, and the growing favor with which they are received by electricians, offers the best guarantee of its permanent value."

"B. SILLIMAN."

From MOSES G. FARMER, of Boston, Mass.

"I have tested 195 feet of this wire, and found it a better insulator than Gutta-Percha."

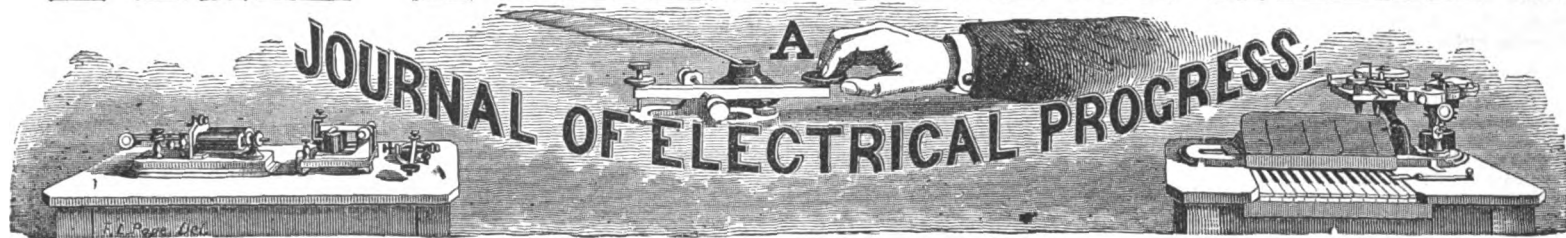
"The instrument used would have shown a current through 300,000 miles of Telegraph wire. The 195 feet showed no leakage in water. The KERITE insulated wire withstands atmospheric agencies wonderfully, and will last for years when exposed to the atmosphere; likewise, when buried in the earth, there is no reason to apprehend decay. It is a well known fact that Gutta-Percha deteriorates very rapidly when exposed to atmospheric influences, and therefore cannot be advantageously used for the covering of wire for out-door exposure unless buried in permanent moisture."

From Mr. E. A. CALAHAN, Supt. Gold and Stock Telegraph Co., May 14, 1870.

"Under all circumstances it has given me the fullest satisfaction. The peculiar nature of our business renders it necessary for us to use the most perfectly insulated wire. I have tried several kinds of insulated wire, but have been compelled to take down and substitute KERITE instead. Wire strung a year since is as good as the first day put up. Have tested it after three days' constant rain and could not find one degree of escape. We use it in gas pipes, and sometimes placed near furnaces subject to very high temperature. I have not been able to detect the slightest change from its original condition."

"We have exposed it to the extreme cold and heat of the past two years and a half, strung over the roofs of buildings, which we consider the best test of its indestructible and insulating qualities."

THE TELEGRAPH.



Vol. VI.—No. 52.

New York, Saturday, August 20, 1870.

Whole No. 214.

REVIEW OF REPORT OF THE SELECT COMMITTEE OF U. S. HOUSE REPRESENTATIVES ON THE POSTAL TELEGRAPH.

(Continued from August 6th.)

MR. WASHBURN proceeds at great length to compute the probable expense of administration of the telegraph as a branch of the postal establishment, and the probable revenue that would be derived from a supposititious threefold increase of the business, under a nominal tariff of charges therefor. The result is, of course, favorable to the proposed system, and a handsome surplus is shown in favor of the postal telegraph administration. In the same manner the amount that would be required to purchase the existing telegraph interests of the country is figured down to from about seven millions to eleven and a half millions of dollars. Mr. Washburne argues that the companies, having accepted the act of 1865, are entitled to demand and receive only the actual value of their lines and material, having no claim to compensation for surrendering a lucrative and increasing business into the hands of the Government *per force*. That, as a transaction between private persons or corporations such an enforced surrender of valuable rights and privileges, without remuneration, would be considered but little better than highway robbery, is too plain to require elaboration or argument. The value of telegraph property is not the bare cost of the lines and material any more than the value of the *New York Herald*, for instance, is the value of the presses, type and other material used in its production. Its value is in its productive capacity for profit to its owners, as Mr. Washburne would be likely to learn emphatically if he should undertake to acquire it. A great nation like the United States could not afford to rob its citizens in the barefaced manner proposed in this report. If the Government ever does assume the telegraph business and property of the country, it has got to pay the value as an investment to its holders. In Great Britain the principle adopted in settling with the telegraph companies was to pay them twenty years' purchase of the profits. On the amount thus calculated bonds were issued which draw interest. It was an excellent transaction for the holders of telegraph stock, and we do not doubt but that a similar purchase would prove highly satisfactory to telegraph proprietors in this country. But, while they cannot reasonably expect to realize as largely as their British brethren, they certainly will receive the actual value of their property. Any pretence or argument for a different mode of calculation and payment is a delusion. The actual value of the telegraph property of this country now is about thirty millions of dollars, and this is about the amount the Government will have to pay therefor if it goes into the telegraph business. In addition, from five millions to ten millions of dollars will be required to strengthen and extend the system. There is not space to go into the elaborate calculations by which Mr. Washburne arrives at his results, but their fallacy is apparent to the most cursory examination. The same is true of his calculation of revenue and expenses. The deficiency must be large in any event. It is true that there will not be the necessity for earning dividends, but this will be offset by the interest accruing on the purchase money and investment of capital, which on \$35,000,000 will be about \$2,000,000 per annum.

3d. That, under government management and a reduced tariff, the number of despatches would increase beyond the capacity of the present facilities, and that they would break down from the start; and that the cost of lines and necessary additions to do the increased business would involve such an outlay as the country is in no condition to stand at this time.

Mr. Washburne's argument upon the point of requisite outlay has already been considered. That the country is in no condition to assume the large expense which

must inevitably attend the seizure of the telegraph interest and business of the country, is patent to every one. The people are constantly demanding economy in the expenditures of the Government and a reduction of taxation. No party which does not provide for these can either retain or secure power. This fact is shown by the action of Congress at its last session, which did not dare to separate, whatever else might be postponed, until the members could go to their constituents with a very material reduction of taxation. Under these circumstances it is the height of folly for Mr. Washburne to demand that the Government shall plunge into this great expenditure, especially when it is not called for by any considerable portion of the people.

As regards the increase of the business beyond the capacity of the lines, we have the experience of Great Britain to instruct us. With ample means, and after months spent in preparing for the business, for weeks after the telegraph lines were transferred to the post-office department, there was an almost complete stoppage of communication. While Mr. Washburne and Mr. Scudamore are obliged to acknowledge the substantial truth of this disgraceful breakdown, they claim that now all the difficulties have been remedied, and the telegraph machinery is working smoothly and satisfactorily. That such is not the case is shown in a minute and particular statement recently published in the *New York Tribune*, from Mr. G. W. Smalley, its able and truthful London correspondent. This communication was written July 14th, and since Mr. Washburne's report was printed.

It is too long for the limited space in these columns to admit of its republication complete, although it would be most excellent reading for the advocates of a postal telegraph. Mr. Smalley is a very fair and candid writer, and would not knowingly state what is untrue. He has no interest in telegraph matters other than that which every one has whose business necessitates the constant use of telegraphic facilities. He says, "The service between London and Dublin has proved so utter a failure in Government hands that for some time past printed notices have been put up in telegraph offices warning the public that messages are subject to delay, and they are in fact accepted at the risk of the sender." Mr. Pim, the member for Dublin, sharply attacked the post-office in the House of Commons on Tuesday night, for "its continued imbecility and mismanagement." Mr. Crawford, one of the members for London, said "he had received many representations from his constituents as to the present imperfect state of telegraphic communication, and assured the Postmaster-General that the community felt this was not what they had a right to expect. He suggested that one reason for the difficulty might be found in the effort of the post-office to carry on a too extended service at too low rates. He had recently had to wait four hours for an answer to a telegram sent to Liverpool, while he received an answer in three hours to a Bombay despatch. The delivery in London itself was badly managed. Formerly messages were sent out as soon as received; each boy received a penny for each message delivered, and of course hurried back to get as many messages and earn as many pennies as he could. Now, on the contrary, the boys not only got no pennies, but were kept at the offices till a number of messages had accumulated, and then all were sent off together. It would be difficult to find a better illustration of the parsimonious spirit and clumsy routine under which the Post-office acts. Again, said Mr. Crawford, each company had formerly its own offices, and there were four in Mincing lane alone; now the offices are consolidated, and there are sometimes so many people at one office, waiting to give in messages, that the crush was like that at the door of a theatre on a benefit night. The Department has not got rid, and apparently does not mean to get rid of its Post-office notions, believing, as I said last February, that because one office can re-

ceive and transmit any number of letters, one office can, in the same way, receive and transmit any number of telegrams."

"My own experience more than confirms what Mr. Crawford says. My despatches ordinarily arrive late, and are carelessly written out. Sometimes they have been unintelligible; sometimes the meaning of them has been wholly changed. A correspondent sent me a telegram from Paris, saying he could do a certain thing for a hundred francs. In the London office they seem never to have heard of French currency, and in the despatch, as it reached me, pounds were substituted for francs. The blunder cost me a journey to Paris. Apparently the provincial press is no better served than in the beginning. The papers of Manchester, Dublin, Edinburgh, and the other great cities used, when the telegraphs were in private hands, to print full reports of the Parliamentary debates the next morning, as the London papers do. They found themselves, at the beginning of the year, suddenly cut off from their usual supply of news. They complained, and I have before related how Mr. Scudamore, with an assurance more than official, replied that they wanted too much news.

"Those papers perversely insisted on knowing their own business better than Mr. Scudamore, and it was understood that they were to be accommodated, but the hierarch of St. Martin's le Grand seems to have adhered to his original opinion. At any rate he has kept down the news with admirable regularity. I have just looked through a file of *The Manchester Examiner* for a month past. Its Parliamentary reports are mere fragments. Except when the House has omitted its evening sitting *The Examiner* has not once been able to publish a full report. 'Continuation not received' is the invariable announcement.

"The Postmaster-General, replying to Mr. Pim and Mr. Crawford, did not undertake to deny that their complaints are just, and ought to be remedied, and had not been remedied. He urged, in extenuation of the sins of his department, that there had been a great increase of business, and great efforts to do the business, and great ill luck in broken wires. The weather, which used to do duty last February, could not well be held responsible for the protracted failure of the summer business, and we hear nothing of it on this occasion. No doubt it is left in reserve, to be brought out with new effect and fresh pathos when the autumn and winter storms set in.

"Finally, the Postmaster-General covered the whole case in the remark that, 'for some cause, the transfer of the telegraphs to the Government had not been satisfactory to the mercantile community.' It is true, Lord Hartington thinks the mercantile community unreasonable, and that they have little to complain of in fact, and that the general public has been benefited, and so on. But I presume the mercantile community of America will take the opinion of the mercantile community of Great Britain in preference to that of Lord Hartington, and, with Lord Hartington's express admission of their dissatisfaction, that part of the discussion must be considered closed."

It cannot reasonably be expected that, in this country, where Government machinery is notoriously inferior to that of the older countries, the result should be more favorable. It may safely be asserted that any attempt to carry on the telegraph business of this country as a branch of the Post-office department, would result even more disgracefully and disastrously than it has in Great Britain."

(To be Continued.)

A WISCONSIN paper claims that the water of the artesian wells in the town of Sparta is so charged with electricity that telegraph wires inserted in it need no other battery.

CORRESPONDENCE.

We do not hold ourselves responsible for the opinions of our correspondents. Our columns are open to free discussions on all telegraphic subjects, without distinction of person or opinion. No notice will be taken of anonymous communications.

The Baltimore B. & B. Management.

TO THE EDITOR OF THE TELEGRAPHER.

I HAVE just seen THE TELEGRAPHER for August 6th, which contains an article from Balto., signed "D," which claims attention.

I would suggest that branch office operators allow those to whom my letter from Baltimore referred, to defend themselves. Probably Mr. "D" wishes promotion, increase of salary, or some favors from the manager that he delights to defend. To show the correctness of my statement to your readers, I will ask Mr. "D" the following: "What was the cause of the intended change of the management of the B. & B. office in Baltimore about eighteen months or so back? What promises were made by the manager if he was retained? Who were the men that got the manager in trouble—and was it not decided by some of the officers that it was from negligence? How many defalcations have taken place, and if the proper management had been exercised, could not all of the above have been avoided? Will the counsel for the management of the B. & B. office answer the above? If he does not, and has anything more to say about my causing ill feeling, I will answer them myself. If I have said anything about any one that is incorrect let those who are charged defend themselves. The defence in this case seems like a petty lawyer defending a victim before a police court for an expected small fee. If my statements will not bear investigation, let him "try it on," and before he gets through he will find that I have not said half that ought to be known.

A recommendation was recently shown me, given to a first class W. U. operator by his manager. To show the bitter feeling of the W. U. officials toward the strikers, they, in giving a recommendation, place in a conspicuous place in the letter the words, "participation in the strike excepted." Now, what good does this do these men? It shows that they will do almost anything to injure those who took part in the strike. These words are evidently placed there to prevent them from getting positions elsewhere. The day is coming when the W. U. Co. will be sorry for this. They are now in want of first class operators and can't get them. It is for the operators now to stick it out, and before another year passes they will command respectable salaries and be treated as men. I am glad to see a disposition on the part of some men to demand \$120 per month where only \$95 to \$100 has recently been paid. Stick it out and it will all come right.

PERDU.

The Humors of the Telegraph.

TO THE EDITOR OF THE TELEGRAPHER.

THE sense of the ludicrous is as keen in a telegrapher as in any other species of the genus homo, and he sees his little joke in, and draws fun from all sorts of subjects as they pass under his observation. The heart of the public is absolutely open to his inspection—not that physical member of our organization that pumps blood for a circulating medium in the human economy, but that intangible seat of the affections from whose never failing depths well up the moving forces of the man.

The post-office clerk sees a great deal of human nature, but it is always an outside view. The envelope with its superscription gives no indication of what it covers. A storm may be therein confined, charged with thunder and lightning to strike prone its victim, and yet in appearance so gentle that to harbor a suspicion of its harmfulness would be unjust. The envelope of the letter is even more tenacious of its hidden secrets than is the man; for who of us, not hardened in crime to callousness of conscience, does not carry around him a tell-tale face, which reveals the happiness or grief of the heart, with never a motion of the lip?

But to the telegrapher humanity has to unbosom itself. It is to no ghastly father that it thus comes for confession and absolution, but for lower aims. It comes with its confession, but with no sorrow for wrongs perpetrated. It comes unblushingly to force the unconscious wire to be instrumental in the perpetration of other wrongs. Familiarity with this phase of humanity has taken the startling out of it, and left in the breast of the telegrapher but the feeling of pity for the wronged and detestation for the villain. But the funny side of humanity, whenever it turns up, exposes a grin which provokes an answering grin almost irresistibly. A telegram, communicating to friends the sorrow which one heart cannot bear alone, may be so expressed as to cause merriment to

the telegraphers throughout its entire journey, although their hearts may be full of sympathy for him whose heart is breaking.

A man wishing to give information of the sickness of his wife, and to show how desperate was the situation, added that three physicians were in attendance, in his anxiety never dreamed how the omission of a simple period would cause his telegram to read: "*Jemima very sick in bed with three doctors.*" The telegraph itself often makes sad havoc with cases of real affliction. The death of a man by hemorrhage is aggravating enough, but when the telegraph changes hemorrhage into *her marriage*, thereby awakening a suspicion of domestic infelicity, and adding to the sharper pains of sundered ties, it is a cause for sorrow rather than an occasion for merriment.

The telegrapher never allows a joke to die to spare the feelings of his brother operator. The "bulls" of the operating fraternity is the stock (laughing) in trade upon which the fun of the business is carried on, and when they catch a manager ordering a supply of "small managers' envelopes," they let the imputation rest where it belongs and deem it legitimate cause for a laugh at the small managers' expense.

The frantic effort of a country operator to duplicate the amount, in figures, of an order to a butcher for two fore-quarters of beef, was successful in nothing but creating a laugh at his expense.

A curbstone electrician, who administers shocks of all sizes and degrees of intensity, from the gentle shock, which causes a delicious tremor to seize the limbs and impart a healthful quiet to the nerves, to the stunner, which makes a man look around and wonder if the lightning struck anybody but him, persisted, even when remonstrated with, in scraping the wires between his battery and instrument, in their entire length, every time he connected them, because his instructions were "to make the wires bright before connecting." His wires were, therefore, under the repeated scrapings, as brilliant as new coined pennies, and he attributed the success of his shocking apparatus to the high polish of his wires.

What receiving clerk has not laughed heartily at the customer who, in reading over his telegram, emphasizes with great warmth certain words, and throws out gestures with a perfect recklessness, not thinking that his message, if it gets through at all, reaches its destination clothed with none of the writer's fervid emphasis nor explanatory gesticulation, but in naked English words.

Who would forbid the telegrapher his fun? He earns a right to it, and its enjoyment relieves, in a slight degree, the wearisomeness of the toil he renders to his employer.

DOT DASH.

A Few Questions to Perdu.

NEW YORK, August 16th.

TO THE EDITOR OF THE TELEGRAPHER.

I HAVE perused the articles written by "Perdu" with interest, but am not quite satisfied on some points, and address a line to you hoping "Mr. Perdu" will answer a question or two. In a letter written at Washington a few weeks since he says that the "coöperative line" is doing well, but no quarterly statement has been given those interested, and a second quarter having passed with the "intimation" only from the Superintendent that the business done was barely sufficient to meet expenses, it becomes necessary that the parties interested should endeavor to prove Mr. "Perdu" a truth teller or a heartless scoundrel. Harsh term the latter may be, but I can't express it in other terms till I am satisfied he has been misinformed. It is unnecessary to have the affairs of the coöperative company ventilated in the columns of our paper, but a firm denial of these assertions is called for from the Superintendent.

First—I wish to know is "Perdu" a coöperative? Second—Why does he wish to keep the matter to himself? I understand he was asked several questions and could or would not answer either of them! Now, let him write it, and perhaps we can be made to believe him.

His letters reflect somewhat on the managers of the "coöperative," and will undoubtedly call forth letters from the parties concerned.

There is not the same spirit manifested by telegraphers that formerly was exhibited. Why is it? Have they lost all the "independence" they exhibited during the "strike." I trust to hear more from the boys in this city.

OLD UN.

ANSWERS TO CORRESPONDENTS.

TELEGRAPHICUS, Chicago.—Kerite covered wire, strung over buildings in this city, has stood well for three years. It has not yet been tested long enough under water to determine its value as a cable insulator.

E. W. B., Barkersville.—Any of the dealers in supplies advertised in our columns can fill your order. Most of them keep a supply on hand ready made.

PERSONALS.

JACK INGLE, who for some time past has been stationed at Table Rock, W. T., is now at Wadsworth, Nevada.

Mr. J. R. MILLS has resigned his position with the B. & B. Telegraph Company, Philadelphia, and will resume his old place in the Franklin Company's New York office.

Mr. ED. C. GREENE has resigned his position with the L. S. & M. S. R. R. at Surgis, Michigan, and accepted a position as press report operator in the East Saginaw, Mich., office of the Western Union Company.

Mr. D. B. HAMLIN has resigned his position in the Toronto office of the Montreal Telegraph Co., and accepted one in the Buffalo, N. Y., Western Union office.

Mr. JOHN HALL, late of the Hamilton office of the Montreal Telegraph Company, takes charge of the Woodstock office of the same company.

Mr. C. H. TWEED, of Kincardine, Ont., has accepted a position in the Montreal Telegraph Company's Hamilton office.

Mr. DINSLEY, late of Burlington, Iowa, has accepted a position in the Hamilton office, Montreal Telegraph Company.

THE TELEGRAPH.

(By Cable.)

SUSPENSION OF TELEGRAPHING.

LONDON, Aug. 15.—The French administration have given notice that the transmission of all private telegrams, both for and through France, is now suspended. Messages for Spain and Portugal may be transmitted outside of France, by way of the Falmouth and Gibraltar cable.

LONDON, Aug. 15, 2 P. M.—The French order in regard to the telegrams has been considerably modified. It is now announced that private telegrams can be accepted for and through France, except for the following departments: Moselle, Bas Rhin, Vosges, Haut Rhin, Haute Marne, Meurthe, Marne, Meuse, Haute Saone.

ACCIDENT TO THE WEST INDIA CABLE.

HAVANA, Aug. 16.—The Panama and West India cable has met with an accident, causing Sir Charles Bright to return to Batubano. After beginning to lay the deep sea cable from Cayo Diego Perez towards Santiago de Cuba a defect was discovered in the cable which had already been laid across the shallows, and was caused, it is thought, by coming in contact with the coral reefs. The steamer Suffolk has returned, and leaves Batubano again to-day. The Dacia is off Diego Perez.

Western Union Telegraph Co.—Official Statement.

	June, 1869.	June, 1870.
Receipts.....	\$590,994 31	\$598,749 31
Expenses.....	381,646 85	422,819 38
Net Profits.....	\$209,447 46	\$175,929 93

The Franklin Telegraph Company.

AN adjourned meeting of the stockholders of this company was held at Boston, Mass., on Monday, the 14th inst. The action of the previous meeting, asking the directors of the company to resign, was rescinded, and the consolidationists have triumphed. The orders of the president which conflicted with those of Mr. Sweet, the general manager, have been withdrawn, and the affairs of the company will be conducted under his general supervision, by the superintendent, Mr. J. G. Smith.

The English Postal Telegraph.

THE total number of messages forwarded from postal telegraph stations in Great Britain, for the week ending July 23d, was 234,194—an increase on the previous week of 19,775; and, for the week ending July 30th, 215,448—a decrease on the previous week of 18,746.

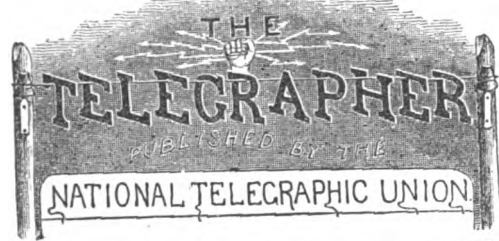
TELEGRAPHIC BREVITIES.

THE Franklin Telegraph Co. recently established an office in the hotel at Stamford, Conn. The only office in town heretofore has been the Western Union office at the depot, but, in order to compete with the Franklin, they have now opened a new office in the Post-office.

Nineteen poles were shivered by lightning near Mianus, Conn., during the storm of last week.

The Canadian Press Association have adopted a resolution thanking Mr. H. P. Dwight, Superintendent of the National Telegraph Company, for courtesies extended to the Association during the recent annual excursion.

THOMPSON.—In San Francisco, Cal., July 18th, 1870, Emily B., wife of J. W. THOMPSON, manager of the Western Union Telegraph office at Yreka, Cal., aged twenty-five years four months and six days. She was a native of Champlain, Clinton County, New York.



SATURDAY, AUGUST 20, 1870.

J. N. ASHLEY.....Publisher and Editor.

OFFICERS OF THE NATIONAL TELEGRAPHIC UNION.

President.....W. H. YOUNG....Box 248 P. O., Washington, D. C.
 Vice-President. W. O. LEWIS....New York.
 Treasurer.....A. L. WHIPPLE...Box 39 P. O., Albany, N. Y.
 Recording Sec...W. W. BURHANS...Box 6010 P. O., New York.
 Corresponding Sec...F. L. POPE...Box 6010 P. O., N. Y.

ANOTHER VOLUME COMPLETED.

WITH the present number we close the SIXTH VOLUME of THE TELEGRAPHER. For more than six years this paper, the publication of which was originally commenced as an experiment by Mr. L. H. SMITH, its first editor, has been maintained in spite of unusual discouragements, and, at times, of unusual efforts to destroy it. Originally established as the organ, and mainly as a record of the *National Telegraphic Union*, it has outlived that organization; and while the Association is numbered with the things that are past, the paper is still vigorous, and bids fair to appear for many more volumes, despite the lukewarmness and indifference of a portion of the telegraphic profession, and the active efforts of some leading telegraphic officials for its suppression. It is the only telegraphic publication ever established and maintained by the practical telegraphers of any country. If, in the future, it should cease to exist, the telegraphers of this country could never hope to have another organ in which their rights could be maintained, and acts of injustice and oppression attempted towards them could be exposed and resisted.

It has been no easy task to carry on successfully such a publication. As the independent organ of the laborers of the profession it has had frequently to pursue a course which telegraph employers have considered inimical to their interests. Within the last year leading officials of the great telegraphic organizations of the country have directly used the influence which their temporary positions gave them to prevent its continued support by their subordinates. Without directly so asserting, they caused it to be understood that to aid in its support would be a bar to employment or advancement in the service of the company they represent. Immediately, and gladly availing themselves of the opportunity which they supposed the failure of the operators' movement in January last afforded them to get rid of a publication whose outspoken independence had held up their schemes and acts of petty tyranny to public reprobation, and had compelled them to treat their subordinates with more consideration than they naturally felt inclined to do, they declared that THE TELEGRAPHER should be suppressed. One of the conditions imposed upon those who had temporarily left the service, upon their reinstatement, was that they should no longer sustain this paper. We have outlived their petty and impotent malice, and have brought this volume to a successful close.

Besides the efforts of open and avowed enemies against the paper we have had, during the last six months, to contend against other adverse influences, which have increased the difficulties of carrying on the paper successfully. After the failure of the strike of the Western Union operators in January last, which we

supported, although not undertaken by our advice, or its wisdom, under the circumstances, apparent to us, the telegraphers generally were discouraged—and, never overburdened with financial prosperity, large numbers of them were, to some extent, impoverished by the losses attendant upon it, and by the reduction of salaries, for which it afforded the desired opportunity. This, of course, reacted upon their organ, and until, by active persecution by our malignant enemies, their indignation and their appreciation of the importance of maintaining it was aroused, there really seemed danger that its continued existence would be seriously imperiled. Since that time more interest has been manifested, and we have the satisfaction of ending the volume successfully.

In reviewing the course of the paper since its editorial supervision was undertaken by us there is nothing which we have occasion to regret. It has been kept independent of all telegraph schemes and cliques. It has been and is what it was intended it should be—the organ of the telegraphic profession. It has and does exert a powerful influence in behalf of those whom it represents. Small souled telegraphic tyrants, unfortunately placed in leading positions, equally hate and fear its influence. Telegraphers rely upon it to support them in maintaining their just rights and privileges, and weekly through its columns make public their grievances. What it has been in the past it will continue to be in the future, with such improvements and increased efficiency as may result from additional experience and more liberal support.

We desire, in closing our record for the year, to return our sincere thanks to the many friends who have stood by us in the vicissitudes and discouragements which have marked the year just passed. Cheered and sustained by their kind and unselfish support, we have never doubted but that we should be able to defeat the machinations of our enemies and overcome the lukewarmness of those whose cause we advocated. We shall ever cherish the recollection of their practical and energetic approval, and, whatever the future may have in store for us, shall feel an abiding confidence that our labors have not been entirely in vain. During the coming year we hope to merit the continuance of their confidence and support, and to add many new friends to the number who have enabled us to make THE TELEGRAPHER a success in every respect.

Home Again.

As the friend who so kindly and ably filled our editorial chair during our recent brief vacation noticed the fact of our absence, we would inform our readers that we are "home again." The interests of THE TELEGRAPHER have been well looked after during our absence, and we are sure its readers have had no reason to regret the temporary relief afforded them as well as ourself.

Renew Your Subscriptions.

WE would call attention to the fact that a large number of subscriptions expire with this number. It is desirable that the renewals should be promptly forwarded to us in order that there may be no break in the receipt of the paper. We trust that all of our present subscribers will not only realize the importance of continuing their own subscriptions, but will also use extra exertion to secure the support of their friends and associates for the telegraphers' organ. With the new volume we confidently anticipate a large increase of our subscription list.

Communication Desired.

WE have several times unsuccessfully endeavored to communicate with Mr. J. W. MARSHALL, of Grenada, Miss., relative to certain subscriptions which he forwarded to us, but which were never received. If some Southern operator who may notice this will call his attention to it we shall be much obliged. From our inability to get letters either to or from him we should judge the difficulty must be in the Grenada Post-office.

A Hint to Napoleon.

A DESPATCH from the seat of war in Europe says that the disastrous defeat of the French army under Marshal McMAHON was caused by a telegraphic blunder. FAIRLY was telegraphed to move on Limbach, but the despatch, as received by him, read "Kausbach," and he acted accordingly—by which move the plan of the campaign was fatally disarranged.

In order to prevent such blunders in future, we suggest to the French Government that they adopt the plan of the Bankers and Brokers' Telegraph Co., and make the operator who committed the blunder pay for all damages caused thereby. In cases of doubt the method pursued is to divide the amount assessed equally between the two operators concerned. Of course, in this case, one party is innocent, and is therefore unjustly and outrageously robbed, but under a despotic Government he couldn't help himself. One serious objection to the working of the plan in this country is that the best operators occasionally leave the line rather than submit to the swindle; and, unfortunately, under a free government, there is no remedy in such cases. The corporation can neither prevent the hegira of the operator nor force him to pay the damages by due process of law.

On Supplying a Number of Telegraph Lines from one Battery.

BY DAVID BROOKS.

THE number of circuits that can be supplied from one battery, without interference, depends in all cases upon the resistance of the battery, as compared to the joint resistance of the lines supplied by that battery.

Say 100 cells Callaud supply six lines, the resistance of which, including relays, are 4,000 units each.

The joint resistance of the lines is..... 666
 The battery..... 300

Total resistance..... 966

Dividing the electromotive force of the battery, 5,600 by 966, we have 5.78 as the magnetic effect, $\frac{1}{6}$ of which is 0.96, being the proportion upon each of the wires when all the circuits are closed.

But when five are opened and the remaining wire closed, the magnetic effect is the quotient of 5,600 divided by the resistance 4,300, which gives us 1.30 as the magnetic effect, being an increase of nearly 35 per cent. This, on a close adjustment, would show "back action," or the "back stroke," as it is often termed, were all the other wires opened simultaneously, which in practice seldom occurs.

In the above case all the battery is placed at one terminal, but dividing and placing half at each, as is generally done in practice, the magnetic effect in each circuit, when all are closed, is 57. When five are open and one closed the magnetic effect on the closed circuit is 67, being an increase of over 17 per cent.

The only objection to working a number of wires from one battery is defective insulation. If in rain the amount of current is increased to double or triple, owing to that passing to ground by insulators, the margin for "back stroke" is proportionally increased.

The French work upon an average six, using one cell for about 500 units resistance in each circuit. Calling the resistance of a No. 9 wire, 100 miles in length, including relays, 4,000 units, would give but eight cells for a main battery working six wires each of that resistance. A letter from one of the *Inspecteurs* says these cells cost in Paris about one franc each. One can thus form some idea of the amount the French expend in batteries compared to the cost of maintaining them in this country.

Often lines of equal length are worked from the same battery when the resistance of those lines is very unequal, one being ten times that of the other. If both are worked from the same pole, that is giving each the full strength, a current ten times stronger than is necessary or required to work it goes over the good or strong circuit, often overpowering and interrupting operations in the weaker circuit. If this wire was connected to the battery, so as to give it one tenth of the current, it could often be operated equally well, and no interference produced in the circuit having greater resistance.

In measuring the resistance of sounders and registers there is found a vast difference in the quality of wire; some sounders give as high as three units, when the same length and size of wire on others give no more than one. This is owing to the difference in the quality of copper, some of which is little better than brass. Very much depends upon using as pure a quality of copper as possible in both sounders and relays.

In these calculations the resistance of the Callaud battery has been given as three units. Dr. Hill, of Chicago, has a modification of the plates which reduces the resistance to a minimum of $1\frac{1}{2}$ units, but it is from two to four weeks in reaching this point. When first set it is about forty units, but closing the circuit, it soon is reduced to five or six, and then is available to work a sounder.

The French Military Telegraphs.

THE French army is provided with the means of telegraphic communication, and the following short account of the apparatus adopted may not be uninteresting:

The batteries employed are cased in felt and fitted with bungs, and sawdust is employed to contain the necessary salts and acids. The apparatus used is that of Morse, and it is placed in a box with a galvanometer and a lightning arrester, to protect the operator during storms. The conductors are covered with gutta percha, so that they may be laid on damp grass or even in water. The telegraph carriage is formed in two compartments, that in front being like the coupé of a railway carriage, serves for an office, while in the after part it carries the reel of wire. In the office there is a table, which supports the instrument, two accumulators, one for the batteries and the other for the signal bells, and a seat with places for two persons. The reel is supported by its axles in two parallel iron bars in the back compartment, so that the conductor is given out as the carriage proceeds on its way. This reel carries three kilometres of wire (nearly two miles), and extra reel carriages are provided, which carry each twenty-one kilometres, or rather more than thirteen miles, and on seven reels. For mountainous countries the carriage is replaced by mules; one of the animals carries a small square tent, a tripod table, the battery, a stake, and a bag of necessities—the whole being arranged in drawers in two cantines, so that everything may be got at instantly without unloading. A second mule carries two reels of wire, one on each side of the *bat*; two other reels are carried on a barrow, which serves for a reel frame, and which is drawn by another mule, and guided, and sometimes carried over difficult places by two men.

Each telegraph carriage is in charge of a sergeant, two corporals and twelve men, who are divided into three groups. One group goes ahead with the sergeant, who traces the line; where poles are used this party makes the holes, and if the conductor is to be laid on the ground it cuts the trench; the second party has charge of the reels and makes the splices, and the third group lays it in the ground or fixes it on the poles. When the latter are used they are generally placed about fifty or sixty metres apart. The officers in charge of the telegraph make a preliminary survey, and lay down the general course for the sergeant and his men; they are answerable for the service, and are bound to inspect the apparatus and *matériel* daily. The time occupied in laying a cable or sunken wire on flat ground is about an hour for three miles, but when erected on posts it takes more than twice that length of time; and when the ground is rugged and sloping, of course progress is comparatively slow. When the telegraph has done its work it can be removed almost as quickly as the men can walk over the ground.—*London Engineer*.

Duties on Telegraph Wire.

The last addition which was made to the tariff bill provides "that round iron, in coils 3-16th of an inch or less in diameter, whether coated with metal or not so coated, and all description of wires of which iron is a component part, not otherwise specifically enumerated or provided for, shall pay the same duty as iron wire, bright, coppered or tinned." This clause is intended solely to strike telegraph wire, on which the duty is now 35 per cent. The proposed duty will be 2 cents per pound, and 15 per cent. *ad valorem*. This will be an advance of over 83 per cent., as telegraph wire now imported costs hardly 4 cents per pound, and pays 35 per cent. or 1.40 cents per pound, and the proposed duty will be 2.60 cents per pound. This job has been effected by the influence which a single large manufactory of wire has been able to exert over the Finance Committee of Congress, and will put at least half a million dollars per year into the pockets of the enterprising firm.—*Iron Trade Circular*.

Deaths by Lightning.

MORE people are killed by lightning than is commonly supposed. According to some recently published statistics more than 10,000 people have been smitten by the electric fluid within the past thirty years, of whom 2,252 were killed outright. The fiery bolts, however, seem to make distinction on account of sex, for of the 880 killed within the last ten years, only 243 were females.

FOR PRIVATE TELEGRAPH LINES.

EDISON & ANDERS' MAGNETOGRAPH.

A simple and cheap Alphabetical Dial Instrument, for private lines. Requires no batteries. A pair of these instruments for sale by

F. L. POPE,

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N. W. CORNER SECOND & CHESTNUT STREETS,

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FLEMMING, POTTER & CO.,

MANUFACTURERS OF EVERY DESCRIPTION OF

Telegraphic Instruments,

Electrical Apparatus

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RAILWAY SIGNALS.

BRADLEY'S PATENT HELICES

FOR

ELECTRO MAGNETS

AND

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These Helices are composed of NAKED COPPER WIRE, carefully wound by ACCURATE MACHINERY, so that the convolutions are separated by a uniform space of only

ONE EIGHT HUNDREDTH OF AN INCH!

A conducting wire of any given length and section, wound in this manner, will allow a much

GREATER NUMBER OF CONVOLUTIONS

around the soft iron core than when covered with silk in the usual manner, thereby

INCREASING the MAGNETIC EFFECT more than 20 per cent.,

without adding to the resistance, or to the battery power required.

These improved Helices have now been extensively used in this country more than nine years, and their great superiority over all others has been FULLY DEMONSTRATED.

In the manufacture of the Helices none but

PURE COPPER WIRE

of the highest conductivity is employed, all the wire used being CAREFULLY and THOROUGHLY TESTED.

In response to numerous requests, the undersigned has now made arrangements to supply Manufacturers and others with these CELEBRATED HELICES in any quantity, at short notice and upon reasonable terms.

COMPLETE ELECTRO-MAGNETS,

with cores of pure soft iron of superior quality, or HELICES and SPOOLS of any dimensions, and of ANY REQUIRED RESISTANCE, will be furnished to order.

Also, constantly on hand and for sale

BRADLEY'S

Improved Telegraph Instruments.

Attention is respectfully called to the following

PRICE LIST.

Button Repeaters.....	\$6 00
Relays, with Helices in bone rubber cylinders (very fine).....	18 50
Small Box Relays.....	15 00
Medium Box Relays.....	17 00
Main Sounders, same as the above, with heavy armature levers, without local connections, 75 cents less.	
Pocket Relays, with all the adjustments of the above, and good Lever Keys.....	22 00
Excellent Registers.....	40 00
Pony Sounders.....	6 75
Keys.....	6 50
Lightning Arrester, with cut-out and switches for grounding either wire.....	6 00

All other appliances made to order. Extra Spools, for replacing such as may be spoiled by lightning, furnished at \$1 25 each. Old Spools taken at the price of new wire by the pound. Goods sent to all parts of the continent with bill C. O. D. Or, to save expense of returning funds by express, remittances may be made in advance by certified check, payable in New York, or by Post-office order, in which case he will make no charge for package.

He has ample facilities for furnishing all other kinds of Telegraph Supplies at lowest manufacturers' prices.

10 per cent. discount on bills of \$20 and over.

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LONG LENGTHS!! FEW JOINTS!!

SUPERIOR QUALITY! LOW PRICES!

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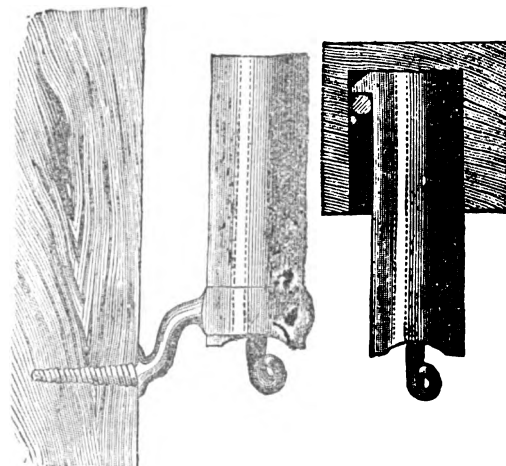
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FOR CROSS-ARM.



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The improvements introduced in the construction of this Insulator make it, beyond question, the BEST.

Its insulating properties exceed those of the glass a hundred thousand fold.

In strength and durability it has no equal.

They are warranted not to break or part.

They are made with a screw shank, to fasten into the pole, price 38 cents each, or without the screw, for cross-arms, 30 cents each.

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 TELEGRAPHIC, ELECTRIC, AND PHILOSOPHICAL APPARATUS, BATTERIES, WIRE, ACIDS, INSULATORS, MEDICAL INSTRUMENTS, AND OTHER SUPPLIES.
 Also, Contractors for the construction, re-construction, and repair of
 TELEGRAPH LINES, SIMPLE BURGLAR ALARMS, FOR PRIVATE RESIDENCES, AND BURGLAR ALARMS WITH "TELL-TALE CLOCK," AND OTHER APPARATUS FOR BANKS AND PUBLIC BUILDINGS.

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KEHITE (OR HORN COVERED) COPPER OR COMPOUND WIRE OR CABLES,
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 ELECTRO-PLATERS' BATTERIES AND MATERIALS,
 ELECTRO GONGS, OF ANY DESIRED SIZE OR WEIGHT,
 ALARM APPARATUS.
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They guarantee to give satisfaction to all who favor them with orders, in the promptness of execution and in the quality of articles supplied.

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 MODERN PRACTICE OF THE ELECTRIC TELEGRAPH.
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COPPER FOR CONDUCTIVITY.

STEEL FOR STRENGTH.

The superiority of the COMPOUND TELEGRAPH WIRE, compared with iron, consists in its LIGHTNESS, reducing by over fifty per cent. the number of poles and insulators required;

Relative TENSILE STRENGTH, homogeneity and elasticity—decreasing the liability to breakage from cold weather, sleet, etc.;

CONDUCTIVITY—insuring great improvement in the working of lines in any condition of the weather;

And in its DURABILITY, which greatly exceeds that of the best galvanized iron wire;

Altogether resulting in a very great reduction in the cost of maintaining and working telegraph lines, while, at the same time, insuring

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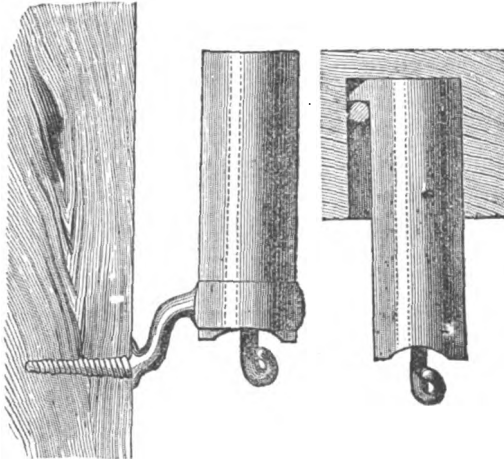
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This Insulator shows a resistance of 100,000,000,000 B. A. Units, exceeding ordinary Insulators in humid weather fully one hundred thousand fold.

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Also, PLAIN, WOVEN, BRAIDED, ENAMELLED, SHELLACED, PARAFFINED, and all kinds of

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many Patterns, Plain, Woven and Braided. Parties being partial to any particular kind need only enclose a small specimen in letter, and it can be imitated in every particular.

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SUBMARINE TELEGRAPH CABLES

AND

INSULATED WIRES

of various kinds, insulated with

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SUBTERRANEAN WIRES with Gutta-Percha and braided fibre, and BISHOP'S PATENT COMPOUND outside.

SUBTERRANEAN WIRES, with Fibre and Bishop's Patent Compound outside.

POLE LINE CORDAGE, with Fibre, and Bishop's Patent Compound outside.

BRIDGE'S PATENT Electric Cordage.

BRIDGE'S PATENT Double Covered Cordage.

BISHOP'S PATENT COMPOUND WIRE,

for out-door use and office connections.

INSULATED WIRES,

with two Conductors, both plain and with braid outside, and a great variety of other kinds made to order.

COTTON AND SILK-COVERED WIRES, both twist and braided.

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We shall be happy to furnish estimates for any amount and size of cable, which will be found to compete with any other construction, both in quality and price.

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"New York, May 14, 1870.

"In nearly two years since the foregoing was written I have made a considerable number of experiments upon the KERITE Compound of A. G. DAY, all of which tend to confirm former results; while the practical test of the continued use of electrical conductors covered with it, and the growing favor with which they are received by electricians, offers the best guarantee of its permanent value."

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"The instrument used would have shown a current through 300,000 miles of Telegraph wire. The 195 feet showed no leakage in water. The KERITE insulated wire withstands atmospheric agencies wonderfully, and will last for years when exposed to the atmosphere; likewise, when buried in the earth, there is no reason to apprehend decay. It is a well known fact that Gutta-Percha deteriorates very rapidly when exposed to atmospheric influences, and therefore cannot be advantageously used for the covering of wire for out-door exposure unless buried in permanent moisture."

From Mr. E. A. CALAHAN, Supt. Gold and Stock
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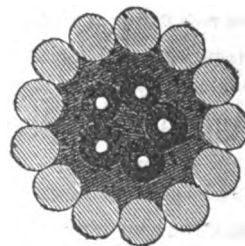
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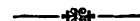
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